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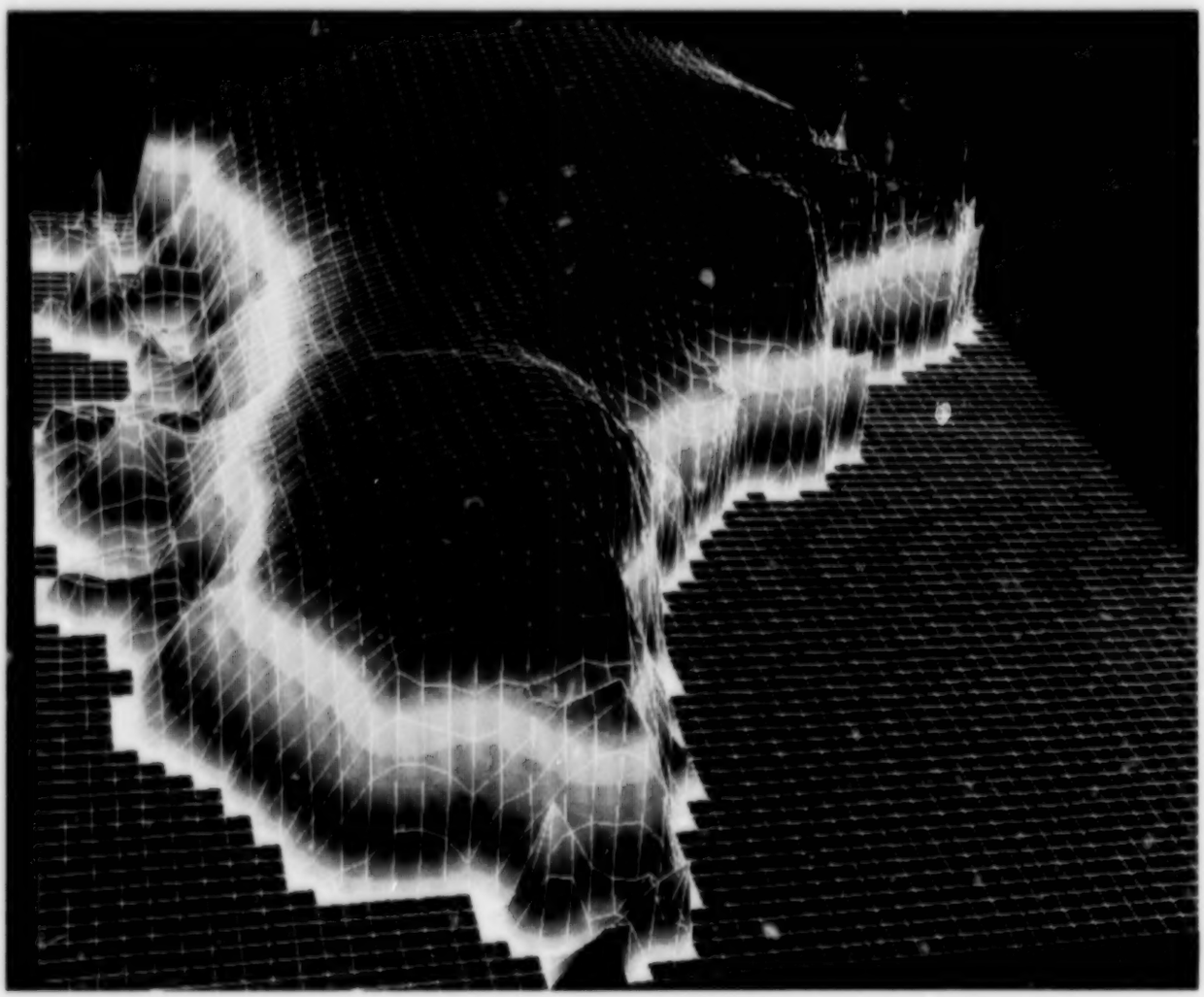

NASA

# Surface Topography of the Greenland Ice Sheet from Satellite Radar Altimetry

ORIGINAL CONTAINS
COLOR ILLUSTRATIONS

**Cover:**

Three-dimensional perspective of Greenland (south of 72° N). Bands change color every 500 meters of elevation. The elevations are derived from Seasat radar altimeter data. (Figure conceived and generated by Steve Fiegles, STX Corporation.)

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# Surface Topography of the Greenland Ice Sheet from Satellite Radar Altimetry

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## CONTENTS


| | | Page |
|---|---|---|
| 1. | PREFACE | 1 |
| 2. | INTRODUCTION | 3 |
| 3. | PRINCIPLES OF RADAR ALTIMETRY OVER ICE SHEETS | 5 |
| | 3.1 Altimeter Operation | 5 |
| | 3.2 Retracking | 5 |
| | 3.3 Loss of Track | 7 |
| | 3.4 Surface Reconstruction from Altimeter Data | 7 |
| | 3.5 Slope-Induced Error | 9 |
| 4. | PROCESSING OF SEASAT DATA | 11 |
| | 4.1 Data Distribution | 11 |
| | 4.2 Miscellaneous Range Corrections | 11 |
| | 4.3 Orbit Adjustment | 11 |
| | 4.4 Slope Corrections | 12 |
| | 4.5 Reference to Mean Sea Level | 12 |
| 5. | INTERPOLATION OF DATA TO GRID | 15 |
| 6. | GREENLAND MAPS | 17 |
| | 6.1 Surface Elevation | 17 |
| | 6.2 Drainage Basins | 18 |
| | 6.3 Slope Corrections | 18 |
| | 6.4 Automatic Gain Control | 19 |
| 7. | REGIONAL STUDIES | 21 |
| | 7.1 Geo-Referenced Data Base | 21 |
| | 7.2 Jakobshavns Glacier Drainage Basin | 21 |
| | 7.3 Crete Station Region | 22 |
| 8. | COMPARISON OF SATELLITE ALTIMETER ELEVATIONS TO OTHER ELEVATION MEASUREMENTS | 23 |
| | 8.1 Geoceiver-Derived Elevations: General | 23 |
| | 8.2 Geoceiver-Derived Elevations: Southern Greenland | 23 |
| | 8.3 Geoceiver-Derived Elevations: Crete Region | 24 |
| | 8.4 Optically-Surveyed Elevations: EGIG Line | 24 |
| | 8.5 Possible Bias in Seasat-Derived Elevations | 25 |
| 9. | FUTURE WORK | 27 |
| 10. | SUMMARY | 29 |
| 11. | ACKNOWLEDGEMENTS | 31 |
| 12. | REFERENCES | 33 |
| | APPENDIX A – MAPS | 35 |
| | APPENDIX B – TABLES | 55 |




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# 1
# PREFACE

Surface elevation maps of the southern half of the Greenland subcontinent are produced from radar altimeter data acquired by the Seasat satellite. A summary of the processing procedure and examples of return waveform data are given. The elevation data are used to generate a regular grid which is then computer-contoured to provide an elevation contour map. Ancillary maps show the statistical quality of the elevation data and various characteristics of the surface. The elevation map is used to define ice flow directions and delineate the major drainage basins. Regional maps of the Jakobshavns Glacier drainage basin and the ice divide in the vicinity of Crete Station are presented. Altimeter-derived elevations are compared with elevations measured by both satellite geoceivers and optical surveying. The altimeter data indicate a surface 2 to 3 meters lower than data from the other survey methods. This difference is probably due to unresolved differences in gravity models used to derive orbital information.

# 2
# INTRODUCTION

Today's ice sheets cover approximately 10 percent of the earth's land surface and contain about 75 percent of the world's fresh water (Paterson, 1980). However, on paleoclimatic time scales of tens of thousands of years, the earth's ice cover has undergone enormous variations. During glacial periods, much of North America and Europe were covered by thick ice sheets, whereas during the minima of the interglacial periods, the volume of the existing ice sheets was much less than today. It has been estimated that Antarctica was 50 percent more voluminous during the last glacial peak 18,000 years ago (Denton and Hughes, 1981) and that global ice volume during the Sangamon interglacial some 125,000 years before present was 10 percent less than present ice volume with a corresponding 6-meter rise in mean sea level (Shackleton and Opdyke, 1973).

It is not known whether the current ice sheets of Antarctica and Greenland are growing or shrinking. Interpretation of ice cores from ice sheets indicates that for the last 10,000 years the earth has been in a relatively warm period (Robin, 1983). From calculations of the temporal variation in solar insolation, which appears to be the principal forcing responsible for the glacial/interglacial cycle (Milankovitch, 1941; Imbrie and Imbrie, 1980), one might expect a protracted cooling trend leading toward the next glacial maximum. However, human activity may have altered this natural cycle. The increased combustion of fossil fuels has raised the amount of $CO_2$ in the atmosphere, and this, along with increased amounts of other similar trace gases, has increased the retention of heat by the atmosphere. This enhanced "greenhouse" effect is believed to portend a warming of the earth's atmosphere by an average of 3 degrees Celsius (Climate Research Board, 1979).

Changes in climate cause changes in ice sheets, but we do not have sufficient data at present to identify what climatically-induced changes are currently taking place within the ice sheets. While most mountain glaciers in temperate climates are experiencing retreat, there is no consensus as to the behavior of ice sheets in the polar regions (NRC Committee on Glaciology, 1985). The results of field measurements in localized regions of Antarctica, Greenland, and some smaller ice caps, range from high rates of thickening to high rates of thinning. These results illustrate the complexity of ice sheet behavior. Ice sheets are actually composed of a collection of individual drainage basins which at times behave synchronously but often demonstrate considerable independence. This independence underscores the requirement that ice sheets must be monitored in their entirety.

Ice sheets not only respond to climatic change, but through their interactions with the atmosphere and oceans, strongly affect global climate. Ice sheet behavior can impact the thermal and chemical structure of the ocean. In addition, the size and extent of the major ice sheets influence the circulation patterns in the atmosphere.

The most immediate response of ice sheet-climate interaction felt elsewhere in the world is a change in sea level; changes in ice volume translate directly into changes in sea level. The 6-meter increase in sea level during the last interglacial is believed to have been caused by the disappearance of the West Antarctic ice sheet (Mercer, 1972). If the entire Antarctic and Greenland ice sheets were to be discharged into the oceans, sea level would rise more than 70 meters. These concerns about ice sheet mass balance and dynamic behavior require a satellite-based monitoring program which spans the vastness of both the Antarctic and Greenland ice sheets. In particular, sequential measurements of ice elevation will provide a direct measurement of thickening or thinning rates and net changes in ice volume.

Surface elevation data are of central importance for studies of ice sheet dynamics. Because ice flows along the direction of maximum surface elevation gradient, i.e., downhill, an elevation map also provides flow direction. Elevation data can be used to delineate the individual drainage basins comprising the ice sheet. The driving stress causing ice motion is related to the product of the ice thickness and surface slope, so again, elevation data are crucial to understanding the ice motion. Finally, most of the perimeter of Antarctica consists of ice cliffs, either on land or at the edge of ice shelves. Elevation data can be interpreted to fix the position of the ice sheet

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edge and monitor it over time. For all these reasons, and more, surface elevation is the single most meaningful parameter to measure to monitor ice sheets.

Spaceborne altimetry fills the need to collect these valuable data on the continental scale. The feasibility of this technique was demonstrated by Brooks and others (1978) when surface elevations from the radar altimeter aboard the Geos-3 satellite compared favorably with surface-based elevations made by geoceivers. The Geos-3 satellite orbited the earth between 65° S and 65° N, so ice sheet coverage was limited to the southern third of Greenland. Since the time of Geos-3, other radar altimeters have flown in space on the Seasat and Geosat satellites. Both of these satellites covered more of the polar regions, up to ± 72°.

This report presents the data of surface topography of the Greenland ice sheet as derived from the radar altimeter on board the Seasat satellite. Seasat operated for only 100 days before a massive power failure occurred in October 1978. Nevertheless, a large data set of range measurements over the Greenland ice sheet was collected. Because the instrument was designed to measure the topography of the ocean surface and not the rougher ice sheet surface, the data required extensive reprocessing to derive useful surface elevations. Most of the procedures involved in this reprocessing have been described elsewhere (Martin and others, 1983; Brenner and others, 1983; and Zwally and others, 1983 and 1989a). This report briefly reviews these procedures to give the reader an appreciation for their effects on the elevation data.

Most results in this report appear in map form. The maps indicate data distribution and quality, and give examples of how these data can be used to conduct various scientific studies. This data set provides the detailed topography necessary to delineate the separate drainage basins of the ice sheet and serves as a baseline against which subsequent elevation surveys can be compared to discover regions of changing elevation. The data set of surface elevation and other derived parameters is available from the World Data Center-A for Glaciology in Boulder, Colorado and from the authors at NASA/Goddard Space Flight Center, Greenbelt, Maryland.

# 3
# PRINCIPLES OF RADAR ALTIMETRY OVER ICE SHEETS

## 3.1 ALTIMETER OPERATION

Altimeters measure the range between the instrument and a reflecting surface by transmitting a signal pulse and timing the delay before the reflected pulse is received back at the altimeter. The Seasat altimeter recorded the reflected energy from each pulse for 187.5 nanoseconds. Individual returns were summed in two groups of 50 returns each to form what is referred to here as a "return waveform." The pulse repetition frequency was 1000 Hz; each return waveform averaged 0.1 second of return. With an effective satellite groundspeed of 6.62 kilometers per second, each return waveform averaged over a 662-meter-long segment of the groundtrack. The information contained within the return waveform was used to carry out a number of data processing operations on board the altimeter including setting the Automatic Gain Control (AGC), predicting the time of the next return pulse, and calculating the range to the surface (MacArthur, 1978). The return waveform, AGC, range, and other parameters including engineering data were telemetered to receiving ground stations and they form the altimeter data set.

The altimeter performed well over the ocean. The regular ocean return waveforms, shown in Figure 1a, permitted an accurate calculation of the range by computers on board the spacecraft. Over the ice sheet, however, the more rapid variation in surface range produced a wide variety of return waveforms (see Figure 1b). The major difficulty encountered by the altimeter for operation over the ice sheet was in keeping the midpoint of the leading edge of the return waveform in the center of the 187.5-nanosecond receiver window. This is important because the range calculated by the Seasat altimeter actually corresponds to the time at the center of the receiver window (or tracking point) rather than to any part of the return waveform itself. It is the function of an onboard tracking circuit to predict the appropriate delay between pulse transmission and the receiving window so that the midpoint of the leading edge of the return waveform coincides with the window center. When these two do not coincide, as is usually the case over the ice sheets, the altimeter range contains an error.

The choice of the midpoint of the leading edge as the appropriate range point over ice represents a compromise between various effects of the interaction of the radar beam with the ice surface. Physically, the midpoint range corresponds to the average range over that portion of the surface which is nearest to the altimeter and is simultaneously illuminated by the altimeter pulse. This is referred to as the "pulse-limited footprint" (PLF). Its size is directly related to the altimeter pulse length. For Seasat, pulse-compression techniques were employed to minimize pulse length and the PLF corresponded to a 1600-meter-diameter circle over a smooth horizontal surface. Alternatives to the midpoint range which have been used by other researchers are the point of first return, corresponding to the minimum range within the PLF; and the half-power range, corresponding to the average range over a region sometimes larger and sometimes smaller than the PLF. Each of these alternatives has disadvantages. The minimum range is very difficult to determine accurately for many return waveforms due to the slow initial rise time of many waveforms (a result of surface roughness on a spatial scale less than the PLF) combined with system noise in the intervals between waveforms. The half-power method is less reliable because power levels vary considerably due to both surface characteristics and variable truncation of waveforms caused by poor tracking. Subsequent to our choice of using midpoint ranging, Ridley and Partington (1988) showed that this method is insensitive to the effects of penetration and subsurface volume scattering.

## 3.2 RETRACKING

To determine the precise location of the midpoint of the leading edge and correct the indicated range for the distance between this point and the center of the timing window, the data over the ice sheet have been reprocessed. Our approach has been to fit each return waveform with a function which approximates the general shape of the return waveform. Figure 2 shows samples of return waveforms and the

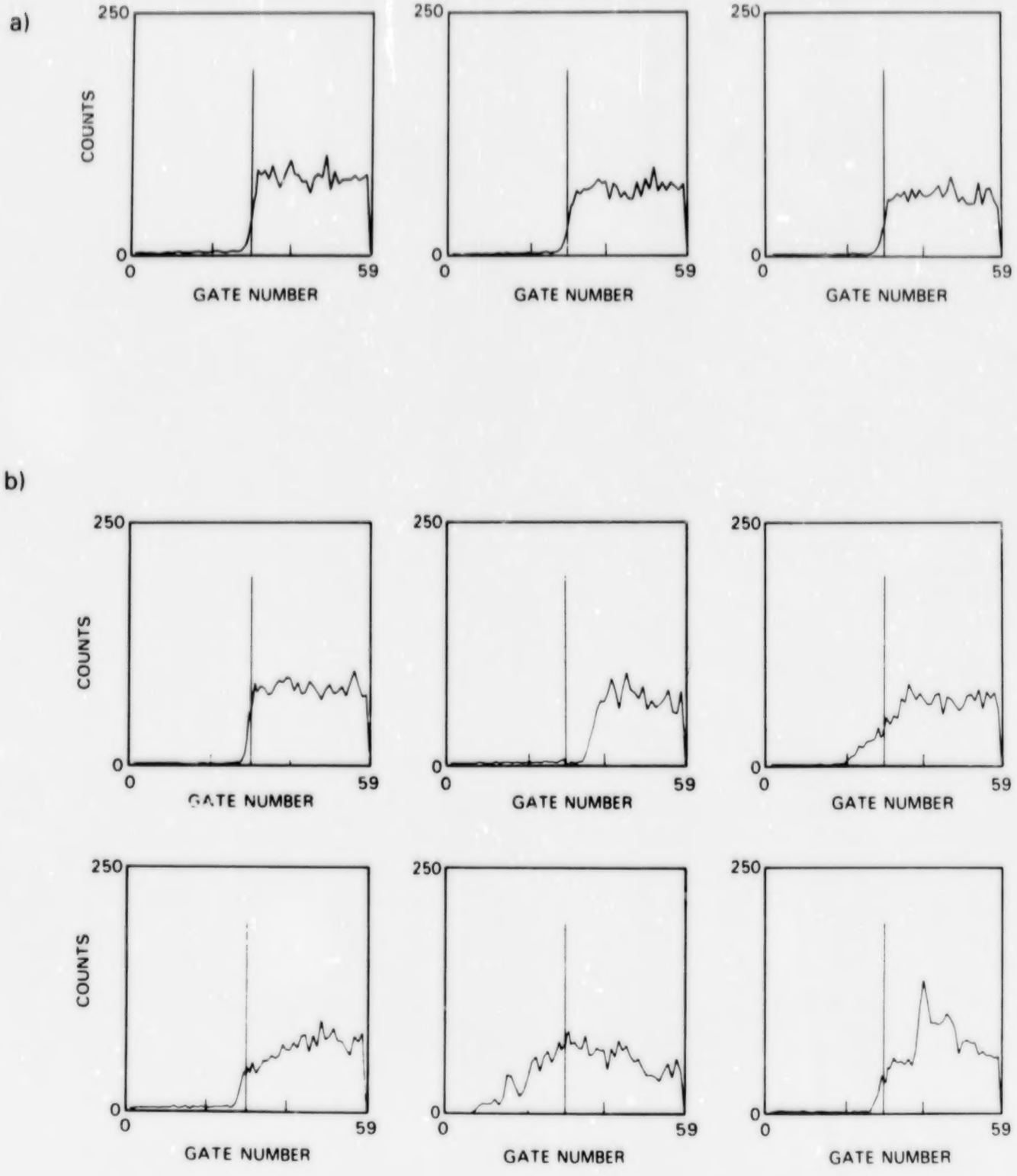


Figure 1. Sample return waveforms over (a) ocean (equatorial Atlantic), and (b) Greenland ice sheet. Horizontal axis corresponds to a 187.5-nanosecond time window which is sampled by 60 full gates and 3 overlapping half-gates. A full gate lasts 3.125 nanoseconds. Vertical axis corresponds to power received during each gated interval (adjusted by an Automatic Gain Control) and is measured in counts. Vertical line in center of each waveform is the tracking point corresponding to the altimeter-derived range to surface. Errors in the tracking of the ice sheet surface and variation of the ice sheet return waveform are evident.

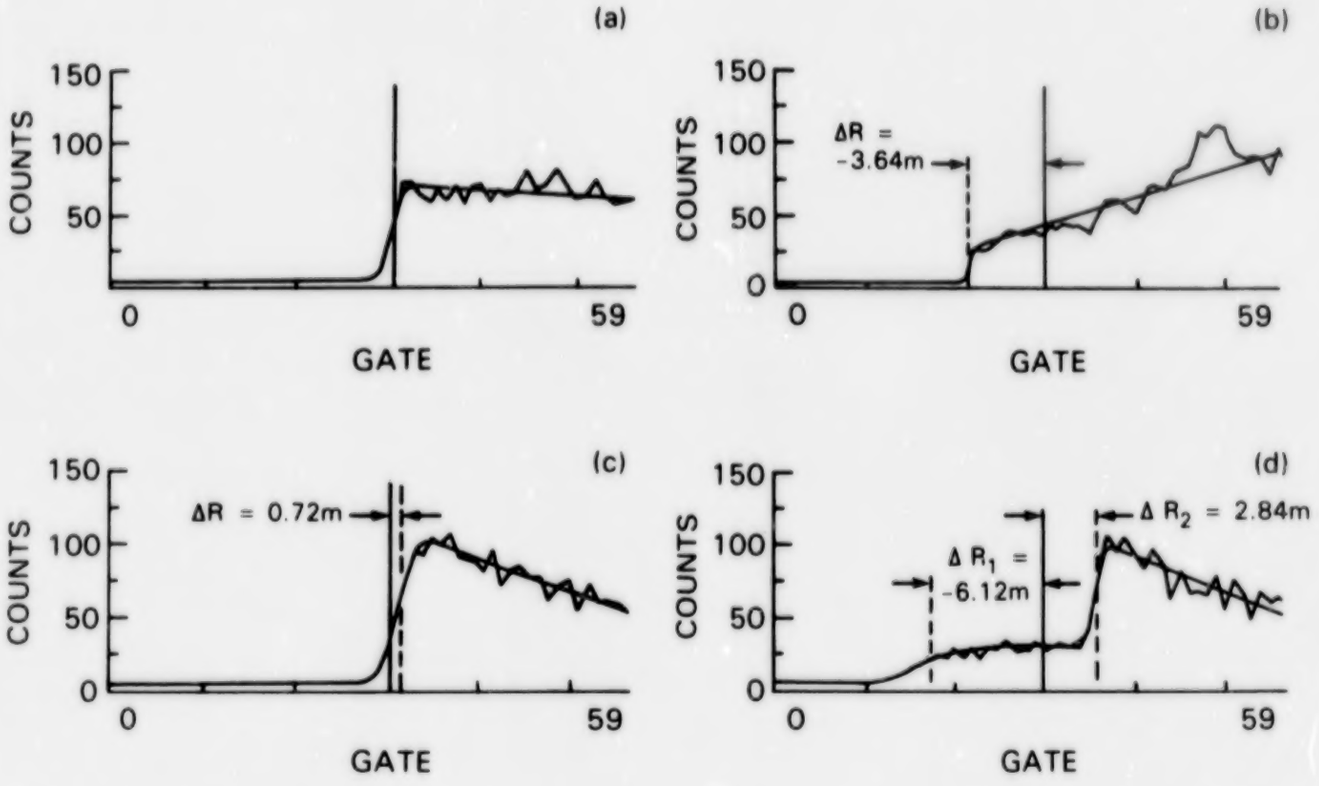


**Figure 2. Sample return waveforms over ice sheet with retracking function superimposed. Retracking range correction is indicated by ΔR. Waveform (d) is fit by a double-return function (nine-parameter) as discussed in text.**

fitted functions. In the fitting procedure, called "retracking," data on the leading edge of the return waveform data are weighted more heavily than data elsewhere in the waveform to ensure a close fit of the analytic function in this critical part of the return. The parameterization of the functions is such that the midpoint of the leading edge can be readily calculated and, from it, the range error. Martin and others (1983) and Zwally and others (1989a) discuss the details of the retracking procedure.

Most often, a five-parameter function adequately approximates the return waveform (Figure 2a-c), but many of the return waveforms appear to include a strong reflection from a second surface. For these "double waveforms," the five-parameter function cannot provide an acceptable fit and a modified nine-parameter function is used (see Figure 2d for an example). A decision algorithm determines whether a waveform is single or double (Zwally and others, 1989a).

### 3.3 LOSS OF TRACK

When the tracking circuit cannot predict the arrival time of the return energy well enough to include the leading edge of the return waveform in the receiver window, no range can be measured. This happens when the range is changing faster than the response time of the tracking circuit. The 187.5-nanosecond-long receiver window corresponds to a range length of only ± 14.1 meters centered about the tracking point. In these cases, the altimeter "loses track" and useful return waveforms are not collected until the altimeter reacquires the return signal. The response time of the tracking circuit is controlled by two parameters which could have been altered by commands from the ground, but this was never done during the shortened lifetime of the Seasat mission. Future altimeter designs will include appropriate modifications to permit more agile tracking over surfaces much rougher than the ocean.

### 3.4 SURFACE RECONSTRUCTION FROM ALTIMETER DATA

The range data are used to reconstruct the elevation profile of the reflecting surface. The surface reconstruction procedure was studied using a computer altimeter simulator which generated return waveforms using the Seasat algorithms for any speci-

fied surface. For simplicity, the initial study was carried out using a surface which varied in two dimensions (elevation and horizontal position beneath the satellite path) and was constant, normal to the satellite path. Figure 3 shows how both the character of the return waveforms and the tracking error vary over even a simple surface. The altimeter-indicated surface before retracking is very different from the true surface. Retracking improves the accuracy of the surface, but there are still significant differences. The agreement between the retracked and true surfaces is best at the topographic highs. The remainder of the retracked surface consists of a succession of hyperbolae, each with an apex coinciding with the true position and elevation of a surface high. The more distant tails of these hyperbolae often become the second return in a double waveform.

The retracked surface is biased toward the higher elevations in the true surface. Surface highs will be accurately measured only if the satellite passes directly over them. Surface troughs may be missed entirely if their curvatures exceed the curvature of the radar wavefront (1/800 km). Waveform number 18 in Figure 3 shows a case where the curvatures of the surface and wavefront nearly match, causing a focusing effect and a very strong first return.

The main characteristic of the altimeter which creates errors in the elevation using the retracked ranges is the fact that the altimeter attempts to track the range to the nearest surface, not necessarily the surface at nadir. Thus, in Figure 3, the altimeter begins ranging forward toward the elevation peaks before it is actually over them and continues to range to them for a time after it has passed them.

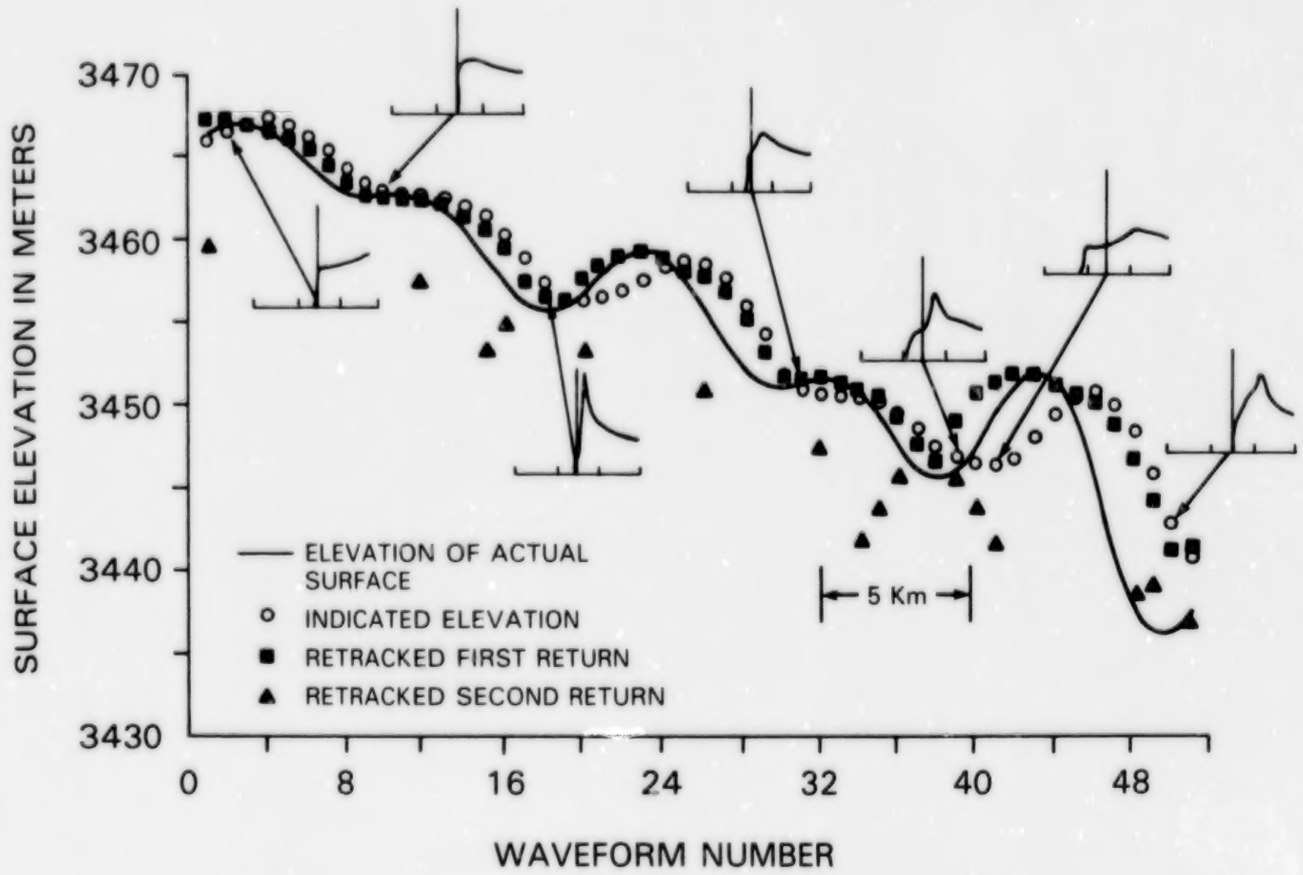


**Figure 3. Surface reconstructed from return waveforms generated using numerical altimeter simulator. True (input) surface is indicated by solid line. Computer-derived return waveforms are shown at selected points along the profile. Open circles represent surface elevations derived from altimeter-measured ranges (these include the tracking errors evident on some of the sample return waveforms, for example, waveform 41). Solid squares represent surface profile after return waveforms have been retracked and retracking corrections have been applied. Solid triangles indicate elevation of second return when retracking algorithm indicated double return waveform.**

Hyperbolic returns, such as appear in Figure 3, are characteristic of point sources in reflection geophysics. Data adjustment to account for this type of return is discussed in the next section.

In the three-dimensional case, the situation is even more complex because the closest surface may occur to the side of the groundtrack. This further hinders attempts to reconstruct the true surface. The behavior of the altimeter, however, remains the same. Gundestrup and others (1986) have demonstrated the tendency of the altimeter to track a series of local surface highs over a real ice sheet surface. They analyzed a portion of measured Seasat ranges in the vicinity of the Dye-3 station in south-central Greenland. By combining these data with surface topography measured by a ground-based optical survey and the known position of the satellite, they showed that the first returns came from the sides of undulations located 2 to 4 kilometers to the side of the groundtrack (Figure 4).

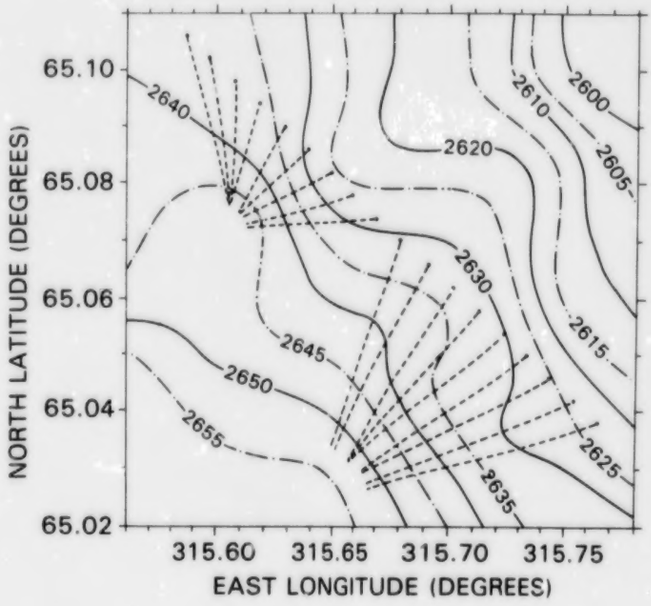


**Figure 4. Surface projection of vectors from Seasat position to nearest surface point for orbit 1236 in the vicinity of Dye-3 station in southern Greenland. Surface elevation is derived from geoceiver and barometer measurements. Figure is modified from Gundestrup and others (1986).**

## 3.5 SLOPE-INDUCED ERROR

To improve the accuracy of the reconstructed surface, the fact that the range is off-nadir must be taken into account. Because this error is caused by sloping surfaces, we have termed this effect "slope-induced" error. The correction can either adjust the measured range to the true nadir range (range adjustment), or the reflection point can be moved from nadir to the actual location (migration). Brenner and others (1983) studied these two methods for different scenarios and concluded that migration is preferable in the two-dimensional case, but for the more realistic three-dimensional case where data are densely spaced along groundtracks which themselves are widely spaced, range adjustment results in a closer approximation to the true surface.

The magnitude of the range adjustment can be derived from Figure 5. Brooks and others (1978) showed that if a flat surface of constant slope $\alpha$ is assumed, the range adjustment is

$$\Delta = H \times (1 - \cos\alpha) \qquad (1)$$

where H is the spacecraft altitude. For small slopes, Equation (1) can be approximated by

$$\Delta = \tfrac{1}{2} \times H \times \alpha^2. \qquad (1')$$

Figure 5 also shows that the true point of reflection is displaced upslope from nadir by the amount

$$\delta = H \times \cos\alpha \times \sin\alpha. \qquad (2)$$

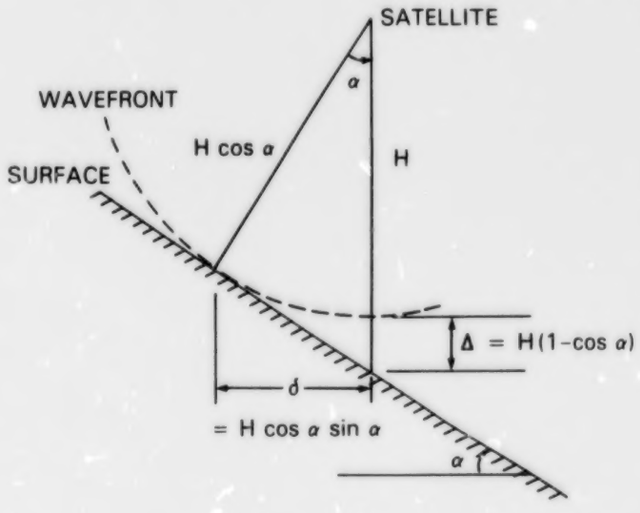


**Figure 5. Schematic diagram of altimeter wavefront intersecting sloping surface. Satellite is at an altitude H and surface slope is $\alpha$. This figure is used to derive the slope-induced errors in range ($\Delta$) and migration ($\delta$).**

In the reconstruction procedure, the determination of $\alpha$ is problematic because the true slope is neither known nor constant. For undulated surfaces, it is difficult to know what averaging scale is appropriate for determining $\alpha$ in the above equations. Figure 6 shows how the slope-induced error varies for a simple undulated surface. The figure also shows how neither the use of the instantaneous slope nor the mean slope in Equation (1') completely removes the slope-induced error.

Figure 6 does suggest that a combination of the instantaneous slope and an appropriate phase shift would optimize the error reduction; however, in practice this is not feasible because the surface is both unknown and comprised of undulations on many wavelength scales. This was borne out by the more realistic, three-dimensional analysis of Brenner and others (1983). They showed that for a typical ice sheet surface, a surface slope averaged over 2.6 kilometers (five data points) was slightly more effective than using a 7.9-kilometer average (13 data points). Further, they recommended that the estimation of the along-track component of $\alpha$ can be optimized if an iterative scheme is employed which converges toward the true surface by a succession of apparent surfaces. Correction for the cross-track component requires ancillary information.

As a general rule of thumb, rougher surfaces cannot be reconstructed as accurately as smoother surfaces. This is true for two reasons; first, the determination of $\alpha$ is more difficult in the rougher case, and second, the highs in the rough case are preferentially sampled while the troughs and steep sides are missed. These two effects are linked because the biasing of the sampling to the topographic highs and the possible omission of some of the lows will produce a smoother apparent surface.

The difficulties introduced to elevation measurement by the slope-induced error can be minimized in future designs by reducing the beamwidth. The Seasat altimeter had a 3-dB half-angle beamwidth of 0.8 degree. At 800 kilometers altitude, this defined a 22-kilometer-diameter spot on a horizontal surface. This is called the "beam-limited footprint." Narrower beams, available by either synthetic radar techniques or laser altimeters, would avoid the possibility of returns from points which are closer to the satellite but well away from nadir, by focusing most of the beam energy close to nadir.

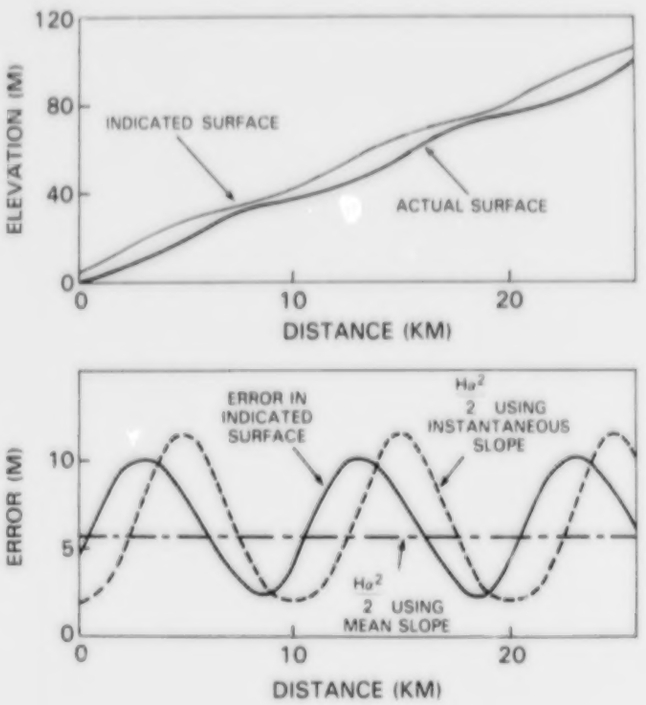


**Figure 6. Difference between actual surface and surface indicated from altimeter-derived ranges. Actual surface has undulations of 5-meter peak-to-trough amplitude with 10-kilometer wavelength superimposed on a mean slope of 0.22 degree. Indicated surface is constructed by using range to closest surface at each point as nadir range. Lower plot shows error between indicated and actual surfaces (solid line), calculation of error from Equation 1' using the true instantaneous slope (dashed line), and error from Equation 1' using the mean slope (short dash-long dash line). (Figure taken from Brenner and others, 1983.)**

# 4
# PROCESSING OF SEASAT DATA

## 4.1 DATA DISTRIBUTION

During the 100-day life of Seasat, about 256,000 individual return waveforms were collected over the subcontinent of Greenland. Many of these were unusable for range measurement due to the absence of a distinct leading edge. After editing the data set to remove unusable data and retracking to correct the range measurement, about 100,000 useful data points remained.

Map 1 gives the geographic distribution of these usable data. The vast majority of these data are over the Greenland ice sheet. The 662-meter spacing between individual data points is so small that the groundtracks of separate satellite passes are easily identified when tracking of the surface was maintained.

The gaps in the groundtracks illustrate how frequently the altimeter lost track. Most of these gaps occur around the perimeter of the ice sheet. Near the ice sheet margin, the ice is thinner and the surface is rougher, so maintaining track is expected to be difficult. Tracking is even worse throughout the rugged coastal mountains.

Most of the data are spread throughout the central portions of the ice sheet. This is where the ice is thickest and the surface is smoothest. However, there are still a number of gaps, even in this area. Although the large-scale surface slope is small, the amplitude and wavelength of undulations are large enough to prevent continuous tracking of the surface with the tracking parameters used for Seasat. A frequent loss of track occurred when the main ice divide was crossed because the surface slope changed quickly. The gaps occur on the west side of the divide because Seasat traveled westward. The higher concentration of data near the northern limit of coverage at 72° N is a result of the increased density of groundtracks at higher latitudes due to orbit inclination.

## 4.2 MISCELLANEOUS RANGE CORRECTIONS

Various additional corrections to the range data must be applied to account for propagation of the radar beam through the ionosphere and troposphere, variation of the earth's solid tide, and offset of the altimeter antenna from the spacecraft's center of gravity. The atmospheric corrections are based on a standard atmospheric model and shorten the range; the tropospheric correction is the largest of these—about 1.5 meters. The solid tide correction is both time- and space-dependent. Theoretically, it could have been as large as 0.4 meter, but for this data set, it never exceeded 0.11 meter. The center-of-gravity correction is also time-dependent and well-known from mission logs. All of these corrections are discussed in more detail in Zwally and others (1989a).

## 4.3 ORBIT ADJUSTMENT

Conversion of range data to surface elevations demands that the position of the altimeter in space be known precisely. Errors in position, particularly radial position, transform directly into errors in surface elevation. The magnitude of this error can be quantified by comparing the apparent surface elevation at locations where two satellite passes cross each other. Map 1 shows that there are a large number of such "crossover" points, especially toward the ice-sheet center and near the northern limit of data. Using the NASA/GSFC PGS-S4 orbit data and the retracked range data corrected for atmospheric and solid tide effects, the elevation differences for all 1235 crossovers have a mean error of 0.33 meter with an RMS residual of 1.15 meters.

These errors were reduced by adjusting the surface elevations over the oceans for each altimeter pass which crossed Greenland to an existing mean ocean surface, derived from Seasat and Geos-3 data (Marsh, personal communication). A first- or-second-order polynomial was used, depending on the availability of data and their proximity to Greenland. The preferred case used only data immediately east and west of Greenland, however, in some instances, ocean data as distant as the Pacific and Indian oceans were used. Prior to this adjustment, the ocean elevations were reduced to a mean sea reference by correcting them for tidal variations (Zwally and others, 1989a). Over central Greenland, the resulting radial orbit corrections averaged 0.21

meter with a standard deviation of 0.60 meter (see Figure 7). With the orbital adjustments applied, the distribution of crossover errors was reduced to a mean of just 0.07 meter with an RMS residual of 0.99 meter (see Figure 8). Details of this adjustment procedure can be found in Zwally and others (1989a).

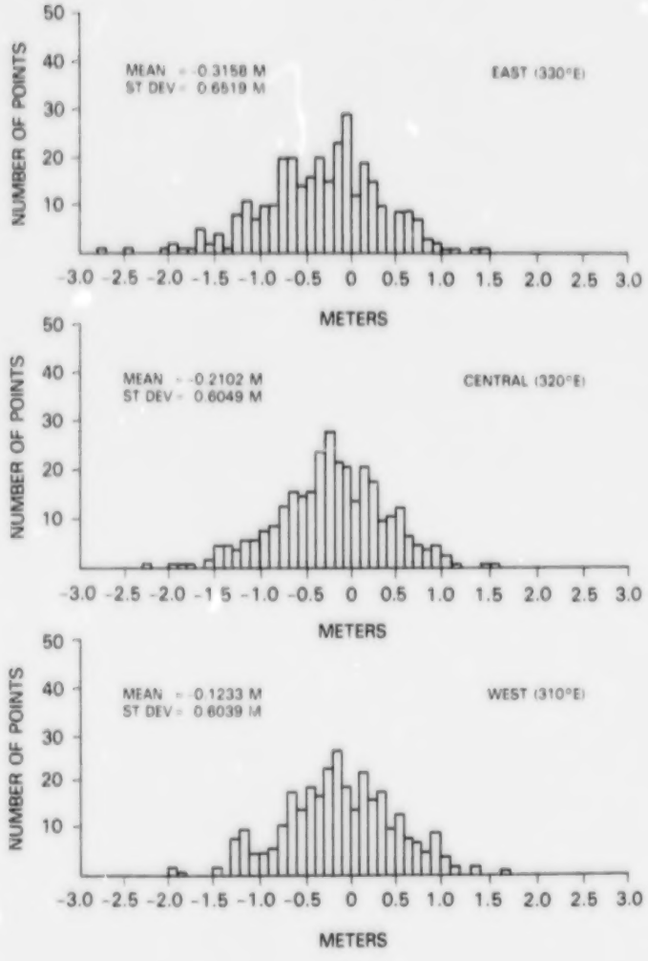


**Figure 7. Orbit adjustments over Greenland. Histograms of adjustments are shown for three longitudes: 330°E, 320°E, and 310°E.**

## 4.4 SLOPE CORRECTIONS

A correction for the slope-induced error was also applied. The cause of this error was discussed in Section 3.5. Figure 9 presents the histogram of surface slopes as well as histograms of the along-track and cross-track slope components. The calculation of the along-track slope applied an iterative technique which began with the apparent surface indicated by the range data and converged to a more accurate representation of the along-track surface. After the final iteration, the total range correction for any data point was converted to an "effective" along-track slope using Equation (1'). Zwally and others (1989a) describe the details of this procedure.

The cross-track slope was calculated using an elevation model of Greenland derived from an earlier version of the grid elevations discussed in Section 5 which follows. A limit at 0.8 degree was set for both the along-track and cross-track slope components. This represents the limiting slope for which the first return would occur at the outer edge of the beam-limited footprint. The larger average slope for the along-track component as shown in Figure 9 is due to a combination of more detailed information which can resolve steeper small-scale slopes in this direction and the orientation of the groundtracks which were preferentially directed down the fall line of the ice sheet.

Once the along-track and cross-track components of the slope were obtained, the range corrections were calculated from Equation (1') using the value of total slope. The histogram of range corrections for slope-induced errors is shown in Figure 10.

## 4.5 REFERENCE TO MEAN SEA LEVEL

Satellite orbits are referenced to a particular ellipsoid. The reference for the Seasat PGS-S4 orbit data is the IUGG-77 ellipsoid (a = 6,378,137 meters; $f$ = 1/298.257). Therefore, the elevations derived from the Seasat altimeter range data are referenced to this surface. To convert these elevations to elevations above mean sea level, a correction for the height of the mean sea surface (or geoid) above this ellipsoid must be applied. We used the GEM10-B model which specifies the height of mean sea level above the IUGG-77 ellipsoid at the nodes of a 1-degree latitude by 1-degree longitude grid. Map 2 shows the contours of this geoid model in the region of Seasat coverage over Greenland. Geoid corrections were not applied to each data point, but rather, geoid corrections were made to the elevation values of the grid described in the next section.

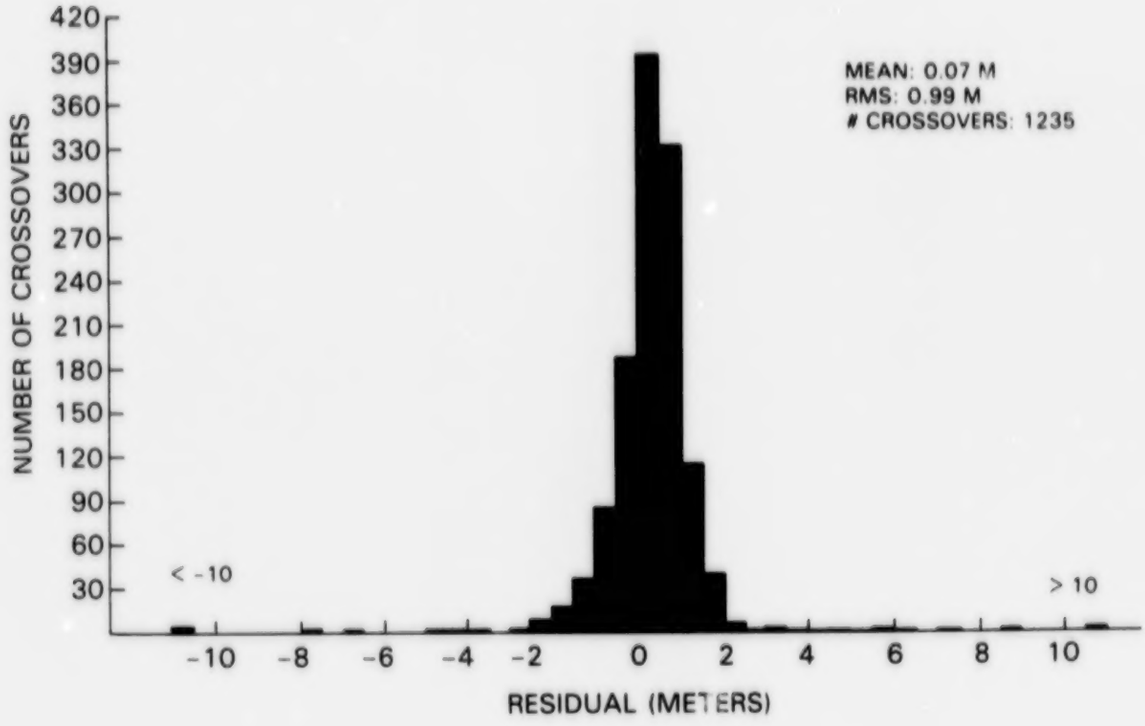


**Figure 8. Histogram of crossover errors for adjusted Seasat orbits.**

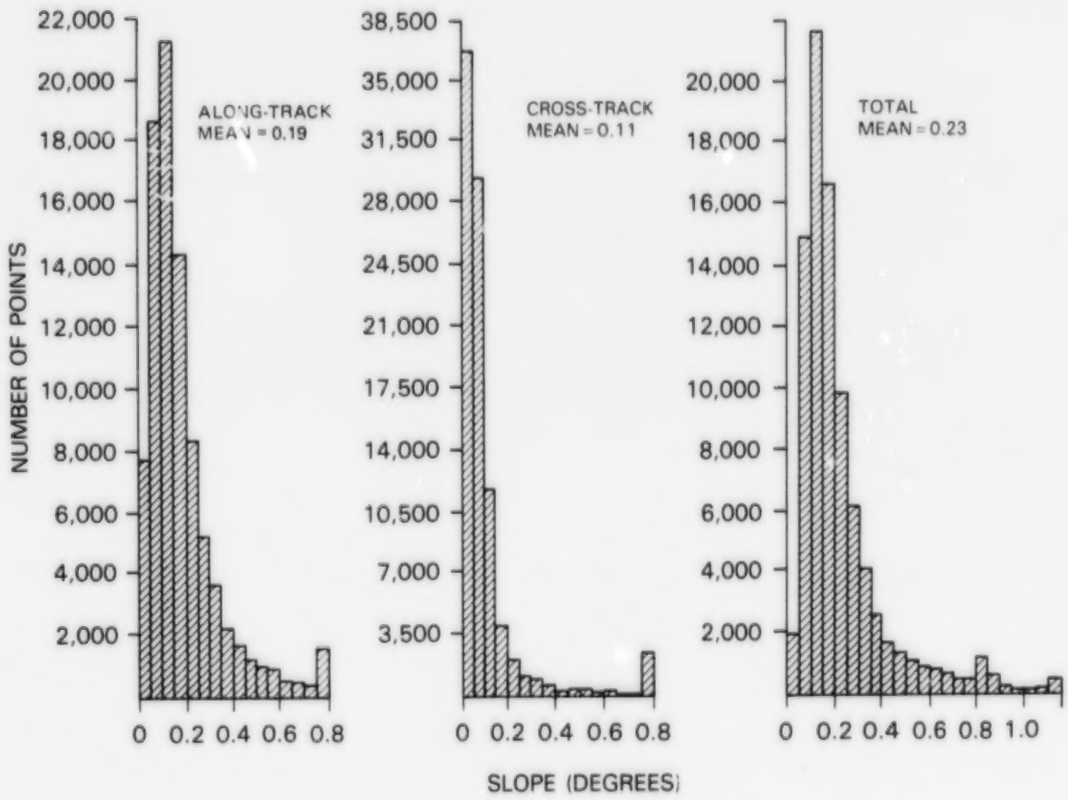


**Figure 9. Histograms of along-track, cross-track, and total surface slopes. Along-track and cross-track components greater than 0.8 degree were set to 0.8 degree (the 3-dB angle of the altimeter antenna).**

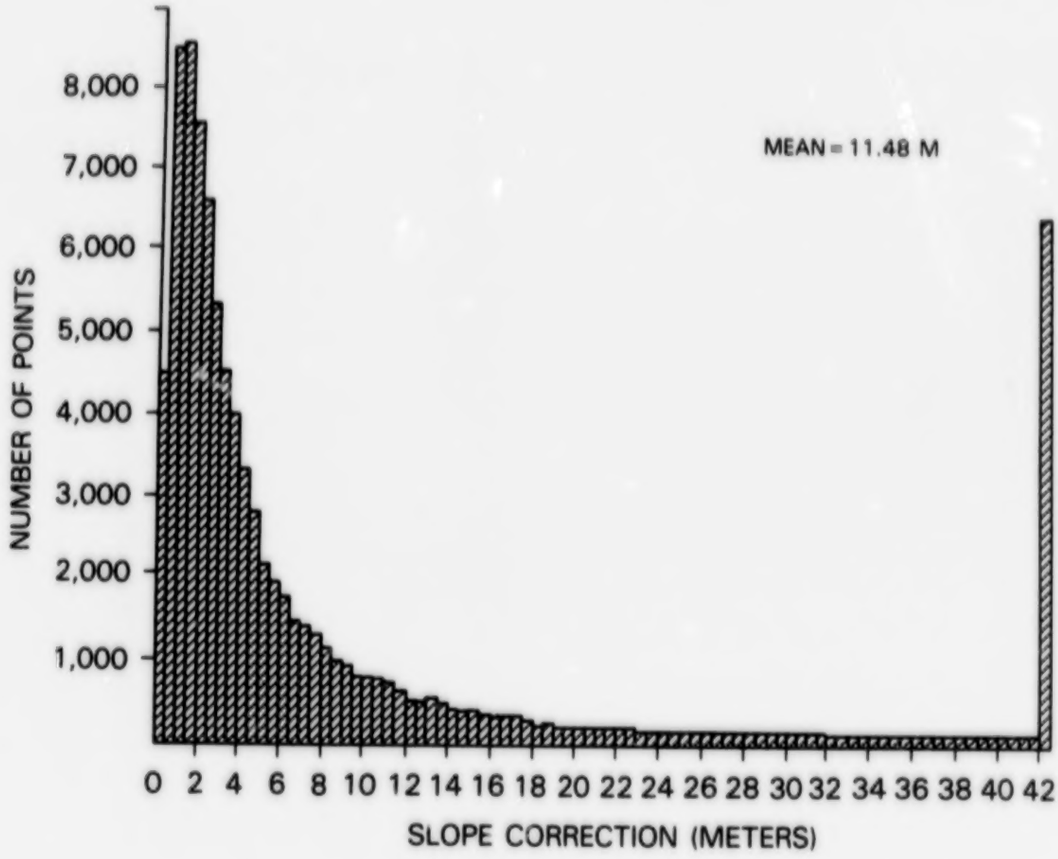


**Figure 10. Histogram of corrections for slope-induced error applied to elevation data.**

# 5
# INTERPOLATION OF DATA TO GRID

The contouring package used to produce the maps in this folio requires that data values be specified on a regular grid. The technique is general and can be applied to data of any type: elevation, geoid, slope correction, etc. We chose a polar stereographic grid with a spacing between gridpoints of 20 kilometers at 90° N. Map 3 shows the grid pattern superimposed on the Greenland map.

The interpolation procedure used to determine the data values at the gridpoints involved fitting a six-parameter, biquadratic function to data in the vicinity of each gridpoint and evaluating the function's value at the gridpoint position. Initially, all data within a specified distance from the gridpoint were used and these data were weighted inversely by the square of their distances from the gridpoint. A singular-value-decomposition (SVD) method was used to solve for the coefficients of the function and to evaluate the goodness of the fit. If this method indicated a poor fit due to sparsity of data, poor data distribution, or large errors, then additional data further from the gridpoint were included by increasing the size of the fitting region. Again, if no acceptable fit was found, the size of the region was increased still further, up to some specified maximum. If a fit was not acceptable over this largest region, then a three-parameter, bilinear function was used, beginning with the smallest fitting region. The details of this gridding process are described in Zwally and others (1989a).

This grid interpolation technique is general and can be applied to any data set. The maps presented in this report were all contoured from grids generated by this interpolation method unless otherwise noted. For the maps which follow in Section 6, the radius of the fitting region varied from 10 kilometers to 67 kilometers.

# 6
# GREENLAND MAPS

## 6.1 SURFACE ELEVATION

Map 4 presents the surface elevation contours of the Greenland ice sheet as measured by the Seasat radar altimeter. A standard contouring routine was used to produce this 100-meter contour plot. Figure 11 presents the same data in a three-dimensional perspective where 500-meter bands of elevation are assigned different colors. The data set used to create both maps is the elevation data interpolated to a 20-kilometer regular grid (see Map 3). These grid elevations are listed in Table 1 along with the geographic location, slope and geoid corrections, and a standard deviation of the grid elevation. The standard deviation was calculated from the SVD method assuming a ± 1-meter standard deviation for each data point used in the interpolation procedure. The elevations are referenced to mean sea level by subtracting the GEM 10-B geoid heights from the elevations above the IUGG-77 ellipsoid at each gridpoint (see Section 4.5).

The general shape of the ice sheet was known from earlier work (for example, Bader, 1961), but the elevations were tied to only a few elevations surveyed by different field teams. The elevation map from altimetry data shows these same features (a near-parabolic cross section with shallow slopes in the center and increasing surface slopes toward the margins) but also presents details of the surface topography never shown before, and notably, represents data obtained with a single instrument.

Map 4 and Figure 11 both show the shape of the ice sheet as asymmetric with the major ice divide displaced east of center. From 72° N to 69° N the ice divide strikes nearly due south, but then turns to the SSW where it passes through a saddle, turns south again, and rises to a dome which dominates the southern portion of the ice sheet. Beginning at a maximum elevation just under 3200 m.a.s.l. at 72° N, the elevation of the ice divide falls to about 2400 m.a.s.l. at the saddle minimum, and rises again to reach almost 2850 m.a.s.l. at the summit of the southern dome. A smaller ice dome lies near the margin of the ice sheet directly south of the major ice divide. The pattern of drainage on the eastern side of the ice sheet consists of a network of small drainage basins, sometimes almost entirely disconnected from the main ice sheet. This is, at least in part, a result of the more rugged mountains in the eastern half of Greenland. By contrast, the drainage to the west of the ice divide is more uniform; individual drainage basins are ill-defined until the margin is nearly reached.

The accuracy of the surface elevation map is not uniform. Map 1 showed the variability in data coverage across the ice sheet due to tracking and retracking difficulties. This variability affects the ability to accurately determine the true surface elevation at any gridpoint (Section 5). The contours of Map 4 are dashed where the calculated error exceeds ± 10 meters. Map 5 presents a statistical summary of the gridding process used to produce the grid elevations. The numerical value at each gridpoint indicates the magnitude of the standard deviation of the gridpoint elevation value. Numerical values start at 1, increase to 9 followed by 0, and continue with the letters A through E. The physical size of the number indicates the size of the fitting region required to arrive at an acceptable fit.

The physical size of the numbers and letters on the ice sheet is small, indicating an ability to obtain a good fit from a biquadratic function without relying on data far from the particular gridpoint. The fitting region is smallest over those areas best covered with groundtracks (Map 1). The poorest quality grid values (represented by large letters) occur in the coastal mountains where data are most sparse.

The numeric sizes of the numbers and letters in Map 5 indicate the ability of the biquadratic function to represent the surface. Where the surface is rough, the number is expected to be larger. Map 5 shows that, in general, the margins are the roughest regions and the ice divides are the smoothest regions as predicted by classical glacier theory. Quantitative comparisons of this parameter between different areas can be misleading, however, because the size of the fitting region varies over the ice sheet. Nevertheless, it is clear from Map 5 that the smoothest regions occur on the ice divides



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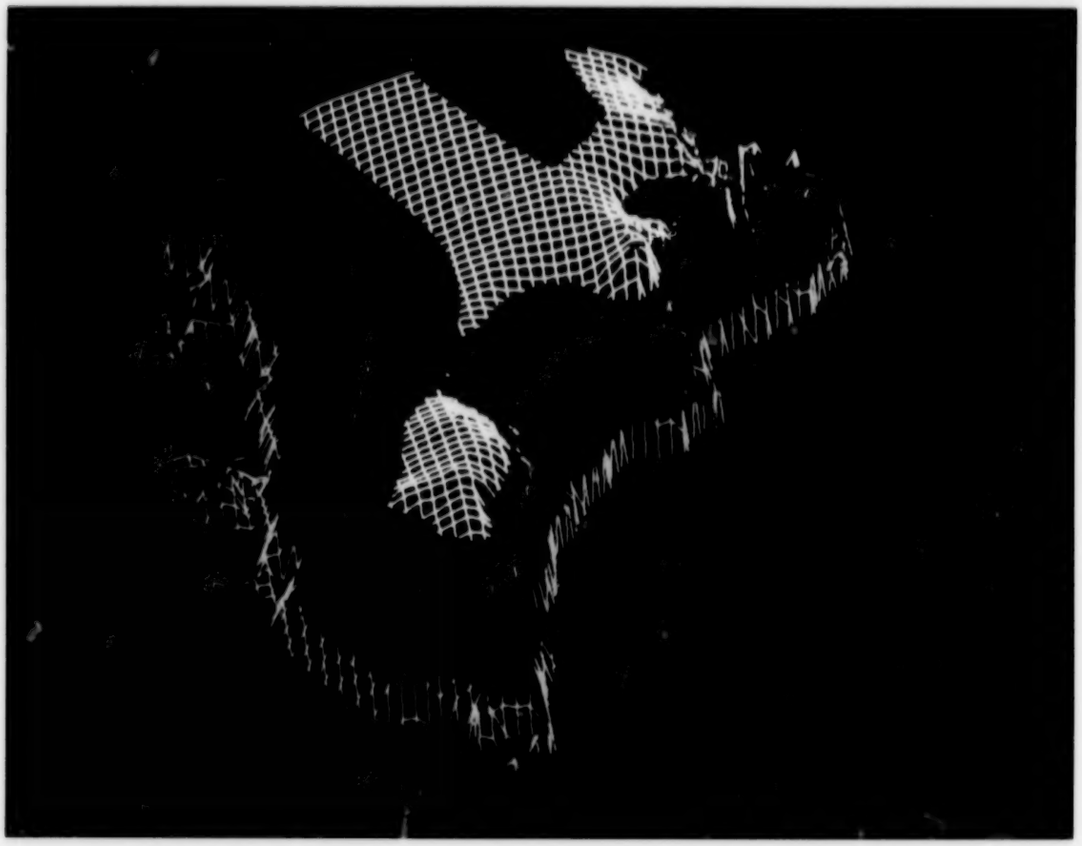

**Figure 11. Three-dimensional perspective of Greenland (south of 72° N) from grid elevations. Bands change color every 500 meters of elevation. View is from SSW.**

and domes. Over the remainder of the ice sheet, this parameter is quite variable, suggesting that a rough surface is prevalent over much of the ice sheet and is often mixed with regions of smoother surface. This roughness is important when considering the accuracy of repeat altimetry missions to detect regions of changing elevation.

## 6.2 DRAINAGE BASINS

The increased detail in the contours of surface elevation permit the identification and delineation of individual drainage basins of the Greenland ice sheet. This ability is useful for glaciological studies which seek to isolate the dynamics of a particular basin for detailed study and for hydrological studies of the hydro-potential of distinct basins discharging ice at particular points of the margin.

The discrimination of separate drainage basins is most apparent when a map of flow direction is produced from grid elevations. Because ice flows downhill in the direction of maximum surface slope, the conversion from elevation to the direction and magnitude of maximum surface slope, and therefore, flow direction, is straightforward. Map 6 plots the azimuth of the maximum surface slope at each gridpoint. This direction is determined at each gridpoint from the gridpoint-centered slopes taken in the two orthogonal grid directions.

Map 7 gives our interpretation of the drainage pattern of the Greenland ice sheet derived from large-scale (40 km) surface slopes (i.e., Map 6). Regions of major convergence or divergence near the coast were identified and boundaries between these regions were traced upstream. This map improves upon an earlier version drawn only from surface elevation contours (Bindschadler, 1984). The strong convergence into narrow outlet glaciers east of the major ice divide is striking. In contrast, the convergence west of the divide is much milder. The accuracy of the basin boundaries is limited by the elevation accuracy near the ice sheet margin. Small errors in the orientation of a drainage basin boundary near the ice sheet margin can be amplified

upstream, causing large errors in the total areal extent of the basin. In an assessment of the equilibrium conditions of the Jakobshavns Glacier, Bindschadler (1984) used altimeter-derived contours to estimate the drainage basin boundaries and estimated the uncertainty of the basin area to be ± 20 percent.

### 6.3 SLOPE CORRECTIONS

Because the correction for the slope-induced error (Section 3.5) was a major correction to the elevation data, a map (Map 8) showing the spatial distribution of slope corrections made over Greenland was generated. The same 20-kilometer grid and contouring package were used to produce Map 8 as were used in the elevation map, but a modified grid interpolation scheme was employed. The modification was necessary due to the large spatial variability of surface slope. Proportionally, spatial variation is more rapid for surface slope than for surface elevation, and slope correction varies as the square of surface slope (see Equation 1'). Thus, attempts to fit a biquadratic surface to the slope correction data produced a distribution of grid values which exhibited large local variability. To reduce this variability, the grid values of slope correction were calculated as the average of at least ten data values in the fitting region around the gridpoint. These grid values of slope correction are included in Table 1.

Map 8 shows the expected pattern of smaller slopes in the central ice sheet while the largest slopes are confined to the marginal regions of the ice sheet and to the mountains. Equation (1') can be used to convert the slope correction to slope: a correction of 10 meters corresponds to a slope of 0.005 radians (about 0.3 degree).

There is a difference between the slopes represented by Map 8 and the slopes derived from the grid elevations. The latter set represent an average over two grid spacings, or 40 kilometers, and are more of a regional slope suitable for calculation of driving stress (Drewry, 1983). The slopes represented in Map 8 are essentially an expression of intermediate-scale slopes which occur within the beam-limited footprint (22-kilometer diameter) and affect the displacement of the first return from nadir. The considerable structure in the contours of Map 8 demonstrates that although the general shape of the ice sheet is smooth, the surface contains undulations everywhere on an intermediate scale which have a significant effect on altimeter performance.

### 6.4 AUTOMATIC GAIN CONTROL

The Automatic Gain Control (AGC) of the altimeter adjusts the receiver gain to maintain a preferred recorded signal strength as the return signal strength varies. Its value can be used as a measure of the return signal strength. Large AGC values correspond to strong return signals. The strength of the return signal will vary with both the geometric shape and reflecting character of the ice sheet surface. Map 9 shows the distribution of AGC over Greenland.

As with the slope correction, the spatial variability of AGC is quite high and the grid values were calculated from an average of AGC within a fitting region local to each gridpoint. The textural homogeneity of an ice-sheet surface on the scale of many kilometers suggests that some of the variability in AGC is caused by surface topography. Figure 3 shows how geometric focusing and defocusing of the beam energy on the scale of the beam-limited footprint are possible.

The broader trend of higher values of AGC in the interior and lower values nearer the margin is probably due to a combination of two effects. The larger surface slopes nearer the margin will tend to reduce the intensity of the return signal relative to the flatter central ice sheet because more of the return will be coming from the edge of the antenna beam. In addition, the Seasat data were collected in late summer when the margins were experiencing surface melting. The presence of free water in the surface snow would reduce the amount of energy returned. In this report we do not attempt to discriminate between these two effects or quantify their relative contributions.

# 7
# REGIONAL STUDIES

## 7.1 GEO-REFERENCED DATA BASE

The examples in Section 6 illustrate how the full data set can be used to produce large-scale maps of different altimeter parameters. There is, however, another set of studies on a regional or local scale which is also important. Considerable effort has been directed toward the organization of these data into a data base which makes such local studies more feasible. The data in this data base are geo-referenced; that is, organized by geographical position to facilitate the access of regional data from a much larger data base. This data base is now archived at both the World Data Center for Glaciology-A in Boulder, Colorado; and at NASA/Goddard Space Flight Center in Greenbelt, Maryland. The altimeter data are stored both as individual elevation measurements and as grid values (see Section 5). These data are available in tape format and are accompanied by a User's Guide (Zwally and others, 1989b) to facilitate the use of these data.

Map 10 shows the geographical scheme used to organize the individual data values. The data are arranged into 4300 storage bins to ease the selection of subsets of data for limited regions. The size of each storage bin decreases with latitude to keep the number of data in any bin from becoming very large. The number of data within any bin ranges from zero to 475. The information on each data point in any bin consists of: location, surface elevation, Seasat orbit number, orbit adjustment, standard deviation of the orbit adjustment, slope correction, and standard deviation of the slope correction.

The grid elevations are also archived. For each gridpoint, there is information on geographic position, surface elevation (including standard deviation), size of the fitting region, and the coefficients of the biquadratic (or bilinear) surface derived for the calculation of the grid value.

As examples of how the data base can be used to produce maps of specific regions, two regions of particular interest are shown: the drainage basin of Jakobshavns Glacier and the ice divide in the vicinity of Crete Station.

## 7.2 JAKOBSHAVNS GLACIER DRAINAGE BASIN

Jakobshavns Glacier, an outlet glacier in West Greenland, is one of the Greenland outlet glaciers for which discharge rates have been calculated (Carbonnell and Bauer, 1968; Lingle and others, 1981). Integration of the snow accumulation over the catchment basin of this glacier results in the balance flux which, when compared to the measured outflow, provides a measure of the average thickening or thinning within the basin. Altimeter-derived elevations were used to produce a contour map of the area containing the drainage basin. This map was then used to define the boundaries of the drainage basin of Jakobshavns Glacier and calculate the balance flux expected throughout the basin (Bindschadler, 1984).

The data base described in Section 7.1 was used to select the relevant data (46,480 individual data points in 1168 bins). A grid 0.1 degree in latitude by 0.2 degree in longitude was generated and grid elevations were calculated in a manner equivalent to the full Greenland case. The data were corrected for slope-induced errors and referenced to mean sea level by subtracting the geoid. Map 11 shows the distribution of groundtracks, Map 12 is the 50-meter contour map generated from the grid elevations, and Map 13 shows the statistics of the gridding process (size of fitting region and standard deviation of the gridded elevations). The contour lines of Map 12 are dashed where the standard deviation of the gridded elevations exceeds $\pm 10$ meters.

Jakobshavns Glacier terminates at 69.1° N, 310° E. On Landsat imagery, the glacier can be identified as extending 100 kilometers inland (Williams, 1986). Map 12 does suggest a zone of moderate convergence upstream of the Jakobshavns Glacier terminus. Map 11 shows that data in this region are sparse and Map 8 indicates the large slope-induced errors. It is important to note these facts when interpreting the details of contours near the margin and the values of those contours. Nevertheless, the altimeter data are the only information used to derive the contour plot and they do indicate the proper location of the outlet glacier.

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## 7.3 CRETE STATION REGION

A second regional map was made of the area around Crete Station (71.12° N, 322.68° E). This site, near both the ice divide and the maximum latitude of Seasat coverage, occurs at a location where the density of data is particularly high. Map 14 shows the distribution of usable data in this region. These data are contained in 371 bins of the geo-referenced data base.

Using a polar stereographic grid with a 5-kilometer grid spacing, the grid elevations were calculated and then contoured at 2-meter intervals to create the plot shown in Map 15, while Map 16 shows the pattern of statistics of the gridding process. The elevation contour lines are dashed in the areas where the standard deviations of the grid elevations exceed $\pm$ 10 meters. Figure 12 is a three-dimensional perspective of the region using colored bands for every 50 meters of elevation. With such a small contouring interval, the undulations in the surface are revealed, especially in the contour plot.

The ice divide is easily identifiable as a fairly sharp ridge 72° N to 71.2° N which broadens to the south and by 70° N is hardly distinguishable. The existence of the saddle along the ice divide at 70° N is not certain because it occurs at the southern limit of the mapped region where artificial features may arise from edge effects of the contouring process.

The surface slope on the eastern side of the ice divide is larger than that on the western side, but the undulations on either side appear approximately equal in amplitude and wavelength. Variations of the surface slope over these undulations are of the order of $10^{-3}$. These undulations would be imperceptible to the field observer's eye without the aid of stake lines or leveling traverses. Extensive radar soundings over the northern half of the mapped region have confirmed that this area is underlain by a rough bed (Hodge, personal communication). A preliminary map of the subglacial relief indicates a positive correlation between the surface and bedrock roughnesses. The scale of undulations is also of the same order as slope variations discernible from Landsat imagery (Swithinbank and others, 1988), and Landsat MSS imagery of this area at low sun angle shows some evidence for the existence of undulations.

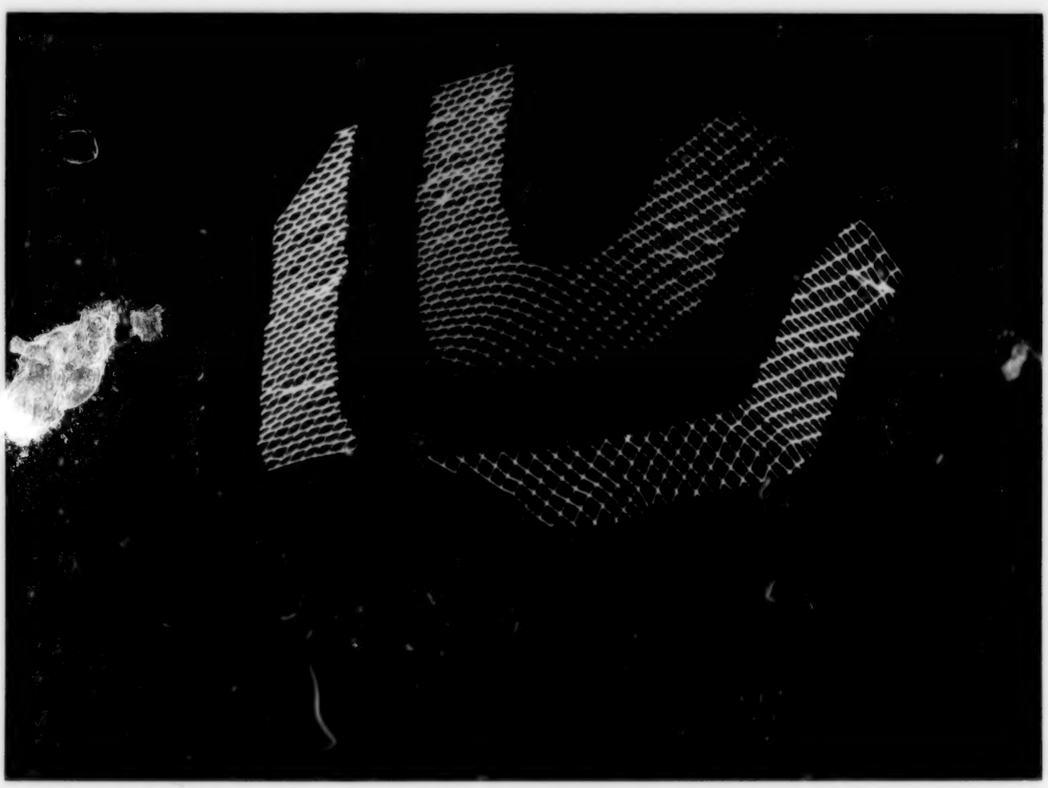

**Figure 12. Three-dimensional perspective of region near Crete Station. Area shown in figure corresponds to Map 16. Bands change color every 50 meters of elevation. View is from SSE.**

# 8
# COMPARISON OF SATELLITE ALTIMETER ELEVATIONS TO OTHER ELEVATION MEASUREMENTS

## 8.1 GEOCEIVER-DERIVED ELEVATIONS: GENERAL

The initial demonstration that satellite altimetry data are useful for ice sheet elevation measurements was made by Brooks and others (1978) when they confirmed that elevations derived from the radar altimeter on Geos-3 were in rough agreement with elevations determined by satellite positioning receiver (geoceiver) on the ice sheet surface (Mock, 1976). Without sufficient data density, however, interpolation of the altimeter data to the precise geoceiver position was not possible. The distribution of Seasat data is more dense and does permit this interpolation.

From 1972 to 1975, eight geoceiver elevations south of 72° N were measured and published by Mock (1976, Table 1). All sites were located near the central ridge of the ice sheet (see Map 17). The published elevations are not corrected for the height of the electrical center of the geoceiver antenna above the surface and are referenced to the NWL-9D ellipsoid (a = 6,378,145 m, f = 1/298.25). A correction is made to transform Mock's data to the IUGG-77 ellipsoid (a = 6,378,137 m, f = 1/298.257), used as the reference for Seasat elevations. This transformation also requires information on the relative positions of the ellipsoid centers and semi-major axes. We assumed that they coincided. In addition, it is assumed that the height of the electrical center of the antenna above the surface was 1 meter in all cases. Mock provides no data on this height at different sites, but for the type of antenna used, our assumption is valid to ± 0.5 meter. A Seasat elevation at each geoceiver position is calculated from the four nearest grid elevations: the gridding surfaces for each of the four gridpoints are evaluated at the geoceiver position and a weighted average is calculated, based on the inverse of the distance between each gridpoint and the geoceiver position.

Table 2 compares the geoceiver elevations to the Seasat elevations. The mean difference (Seasat-Mock) is −5.71 meters with a standard deviation of ± 7.64 meters. The derived accuracy of the Seasat measurement is roughly ± 2 meters over the central region (see Figure 8). The accuracy of the geoceiver measurement varies from site to site, depending primarily on the number of satellite passes obtained. Mock's estimates of the elevation error at each site range from 1.5 to 5 meters. With only eight comparisons at six sites, a zero mean cannot be expected, but a difference of zero meters is within one standard deviation of the calculated mean. From work done in Antarctica using similar geoceivers, Bindschadler and others (1987) report that multiple-pass elevations obtained 1 year apart differed by a mean of 3.6 meters. Thus, the size of the standard deviation is reasonable.

## 8.2 GEOCEIVER-DERIVED ELEVATIONS: SOUTHERN GREENLAND

A second set of geoceiver measurements was obtained by glaciologists of the Ohio State University during the summers of 1980 and 1981 (Drew, 1983). Their measurements were concentrated in three clusters in southern Greenland (see Map 17). Table 3 summarizes the comparison between their 22 geoceiver sites and corresponding Seasat elevations calculated from grid elevations as described in Section 5. The OSU measurements were referenced to the WGS-66 ellipsoid (a = 6,378,145 meters, f = 1/298.25) and are transformed in Table 3 to the IUGG-77 ellipsoid.

The mean difference (Seasat-OSU) in Table 3 is −0.87 ± 12.59 meters. With this larger sample size, the mean has decreased to less than one meter. The errors quoted for the geoceiver elevations were generally less than one meter due to the large number of passes collected at each site (Drew, 1983). In contrast to the reduced mean difference, the standard deviation has increased. The western cluster (sites beginning with WC) occur in a region where derived errors of the gridded altimeter elevations exceed ± 10 meters. However, there is a large difference seen in at least one site in each OSU cluster (WC, CC, and EC). Sites located in deep surface troughs "hidden" from the altimeter by higher surrounding topography seem unlikely in the CC and EC clusters because the sense of the difference is

that the altimeter surface is lower than the geoceiver surface. There seems to be no systematic explanation for the large standard deviation.

## 8.3 GEOCEIVER-DERIVED ELEVATIONS: CRETE STATION REGION

A third set of geoceiver-derived elevations was collected by Danish field parties in the region around Crete Station (71.1° N, 322.7° E) in 1984 and 1985. It is expected that the Seasat elevations in this region are particularly good because it is near the center of the ice sheet and near the latitude where the density of coverage is at a maximum. Gundestrup (personal communication, 1986) has made data available to us for the seven geoceiver sites (labeled A, B, D, E, F, G, and H). These locations, along with Crete Station (occupied with a geoceiver in 1972 by Mock), are included in Map 16. The Danish geoceiver elevations are referenced to the WGS-72 ellipsoid (a = 6,378,135 m, f = 1/298.26) and are transformed to the IUGG-77 ellipsoid and adjusted for antenna height for the comparison with Seasat elevations in Table 4. The Seasat elevations are calculated from the grid elevations as described earlier but employing the finer resolution, 5-kilometer grid used to generate Map 16. The elevations for the sites in Table 4 do not agree with the elevations on Map 16 because the map is referenced to mean sea level and the Table 4 elevations are referenced to the IUGG-77 or WGS-72 ellipsoid. The difference is the geoid.

Table 4 indicates the mean elevation difference (Seasat-Danish) is $-3.94 \pm 2.15$ meters. The size of the mean is intermediate between the two previous comparisons in Sections 8.1 and 8.2. The sample size is small, nevertheless, the standard deviation is small. A mean difference of zero is no longer within one standard deviation of the calculated mean. This suggests that there may be a bias between the Seasat-derived and geoceiver-derived surfaces (with the Seasat surface being slightly lower), but from the three comparisons with geoceiver data, it is not possible to draw definite conclusions. This point is discussed in more detail in Section 8.5.

## 8.4 OPTICALLY-SURVEYED ELEVATIONS: EGIG LINE

Another data set with which comparisons can be made is a line of surface markers known as the EGIG line (Malzer, 1964) (see Map 17). This line was surveyed in 1959 and again in 1968 (Seckel, 1977). The important difference between these data and the other data sets is that this line was optically surveyed and tied to sea level at the western coast of Greenland. Thus, the elevations are directly referenced to mean sea level. To compare them to satellite elevations, a geoid model must be applied. Using the GEM10-B geoid model which is specified on a 1-degree by 1-degree grid, the Seasat elevations (calculated at the EGIG stake location using the weighted averaging technique described earlier) were adjusted to a mean sea level reference.

Table 5 shows the comparison of these two elevation sets. The mean difference (Seasat-EGIG) is $-0.53 \pm 11.13$ meters. Figure 13 plots the comparison with distance along the EGIG line. A systematic trend in the difference is clear, with a larger absolute difference occurring nearer to the ice sheet margin. The larger differences are believed to be caused by a combination of the larger slope-induced error (see Map 8) and the rougher surface. These differences are also responsible for the large standard deviations nearer to the margin.

A second comparison using the EGIG data is possible when considering those data which lie in the Crete region discussed in Sections 7.3 and 8.3. Map 16 includes the locations of the EGIG stakes. Table 6 repeats the EGIG elevations and compares them with Seasat elevations calculated at the EGIG stake locations employing the higher-resolution grid used to generate the 2-meter contour elevation map (Map 16), and adjusting them to a mean sea level reference using the GEM10-B geoid. The Seasat elevations are seen to agree well with their respective locations on the 2-meter contour map. This serves as a consistency check on the weighted-average method used to derive the Seasat elevations for Tables 2 through 6. The mean difference (Seasat-EGIG) is $-2.60 \pm 2.76$ meters. This is similar to the difference calculated in this region between the Danish geoceivers and Seasat (see Table 4).

The individual stake differences are included in Figure 13. The differences in the Crete region are very similar to the differences in Table 5. This similarity confirms that the surface definition is not strongly dependent on grid size. The small differences between the results of Tables 5 and 6 are probably due to the ability of the smaller grid to better represent the details of the surface.

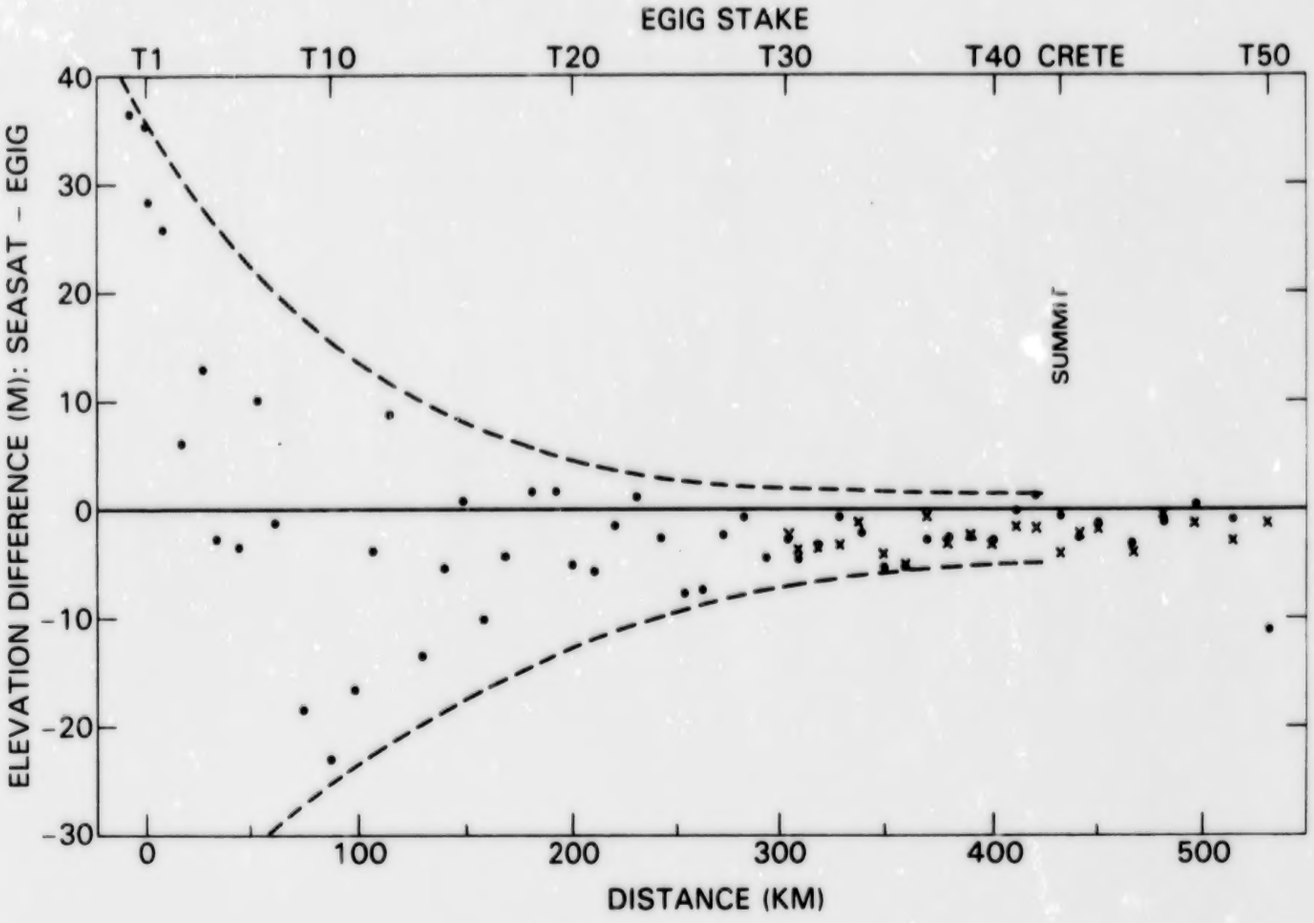


**Figure 13. Elevation differences between Seasat and EGIG survey. Solid circles are differences using Seasat elevations from 20-kilometer grid (Table 5). X's are differences using Seasat elevations from 5-kilometer grid in region around Crete Station (Table 6).**

## 8.5 POSSIBLE BIAS IN SEASAT-DERIVED ELEVATIONS

In each of the five comparisons made here between Seasat elevations and elevations derived by either geoceiver or optical surveying, Seasat elevations were lower. Figure 14 summarizes these comparisons. The standard deviations are smallest for the two comparisons made for the region around Crete Station. For these two, a zero bias does not fall within one standard deviation of the mean difference. On the other hand, for the other three comparisons, zero bias is included, and for two of these, the mean itself is within 1 meter of zero. Figure 14 suggests that Seasat elevations may be lower by anywhere from 2 to 3 meters on average than those derived by either geoceiver or optical survey.

One possibility for the differences between the Seasat elevations and the geoceiver elevations is differences in the orbital calculations used by Seasat and by the geoceiver satellites. Such differences could arise from different gravity models being used in the generation of the respective orbit ephemerides. However, this would not explain the differences with the optical survey data.

Another possibility is penetration of the radar pulse into the ice sheet surface which alters the shape of the leading edge of the return waveform. Significant penetration could lead to a volume scattering component which, when the return waveform is retracked, could cause a range error. Ridley and Partington (1988) have shown that this error can overestimate the range (and underestimate the elevation) by as much as 3.3 meters. The error, however,

is dependent on the retracking method; Ridley and Partington further state that the Martin and others (1983) method used to retrack the Seasat data is more accurate than other methods they tested (see Section 3.2). Nevertheless, it is useful to keep the effect of penetration in mind. The largest biases in Figure 14 are for those comparison sets which occur on the highest elevations of the ice sheet where penetration is more likely. Unfortunately, a sufficient amount of control data are not available to make possible any comprehensive study of regional or temporal trends in the differences. Nevertheless, the possible existence of differences must not be ignored when combining data sets of elevation collected by different sources.

Neither can the possibility be excluded that these differences represent real elevation change. Again, the data are too sparse in time, location, and number to reject or confirm this possibility at this time. These comparisons of data sets underscore the need for reliable reference levels. Without them, detection of changes in ice sheet elevation will not be possible.

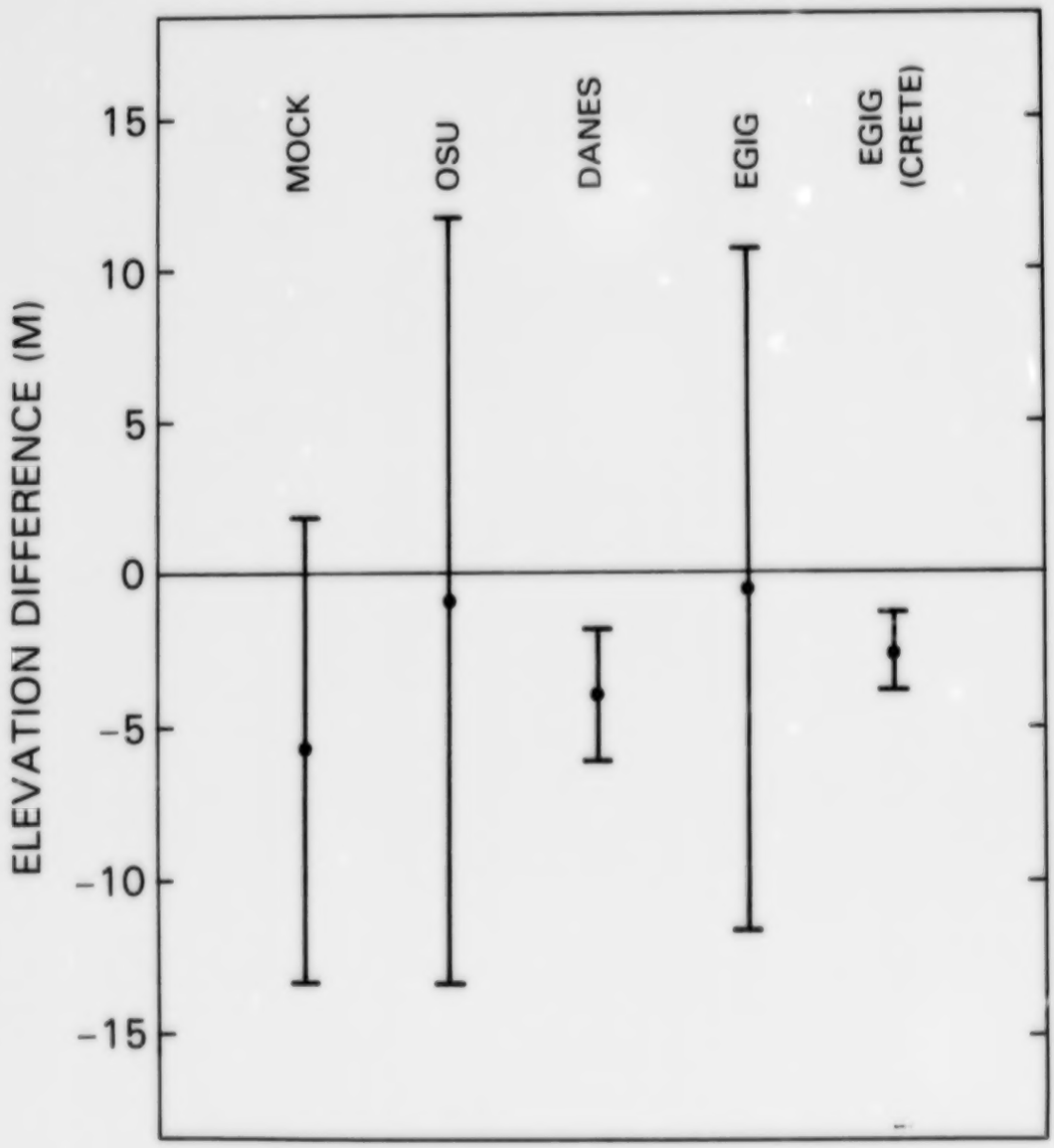


**Figure 14. Mean elevation difference for five comparison sets appearing in Tables 2 through 6. Length of bar corresponds to one standard deviation.**

# 9
# FUTURE WORK

Nearly all of the work discussed in the preceding sections has been based on the analysis of a single parameter from the altimeter data–the midpoint of the leading edge. We have interpreted this parameter to be the best representative measure of the average range to the near-surface. Other measures of range were discussed in Section 3.1. Some useful analysis by Partington and others (1987) has been completed with this approach in mapping crevasse fields and grounding lines in Antarctica.

The wide variety of waveforms shown earlier in Figure 3 indicates that the details of individual waveforms contain information on the geometric character of the surface. The slope and height of the leading edge, the slope of the trailing edge and the separation of double waveforms are all important data which deserve attention. The development of methods to extract this information will rely on model simulations to demonstrate the uniqueness of inverse techniques. Section 6.4 briefly discussed the AGC parameter, but much more interpretation of the variation in this parameter is possible.

Most waveform details are a result of the wide-angle beam of the altimeter. While the illumination of a large surface area enables the collection of information about that area, the interpretation of this information may prove difficult. The effect of slope-induced errors also limits the accuracy of the primary measurement, the elevation, for the wide-angle altimeter. Thus, it is our feeling that future altimeters would be more useful to the glaciological community if the footprint of the altimeter was substantially reduced. For radar systems, this can be done using synthetic aperture techniques. An alternative is the use of a laser whose narrow beam also avoids the need for a large antenna. Both techniques are presently being studied and it is hoped that future spacecraft will include such instruments.

# 10
# SUMMARY

Altimetry from space provides the synoptic coverage and the data density to map the entirety of the polar ice sheets accurately enough to detect changes in their elevations. In this report, the data from the radar altimeter on board the Seasat satellite were analyzed to determine a number of fundamental glaciological characteristics such as shape, flow direction, and drainage basin boundaries. These data serve as a baseline data set from which the mass balance of the ice sheets will be measurable directly. Used in this and other ways, these data, and the continued monitoring of the polar ice sheets from space, will enable scientists to assess the current role of the ice sheets in their effect on the global climate.

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## 11
## ACKNOWLEDGEMENTS

The authors would like to thank Dr. Neils Gundestrup and Dr. Neil McIntyre for their helpful comments on a preliminary draft. This work was supported by NASA's Oceans Program.

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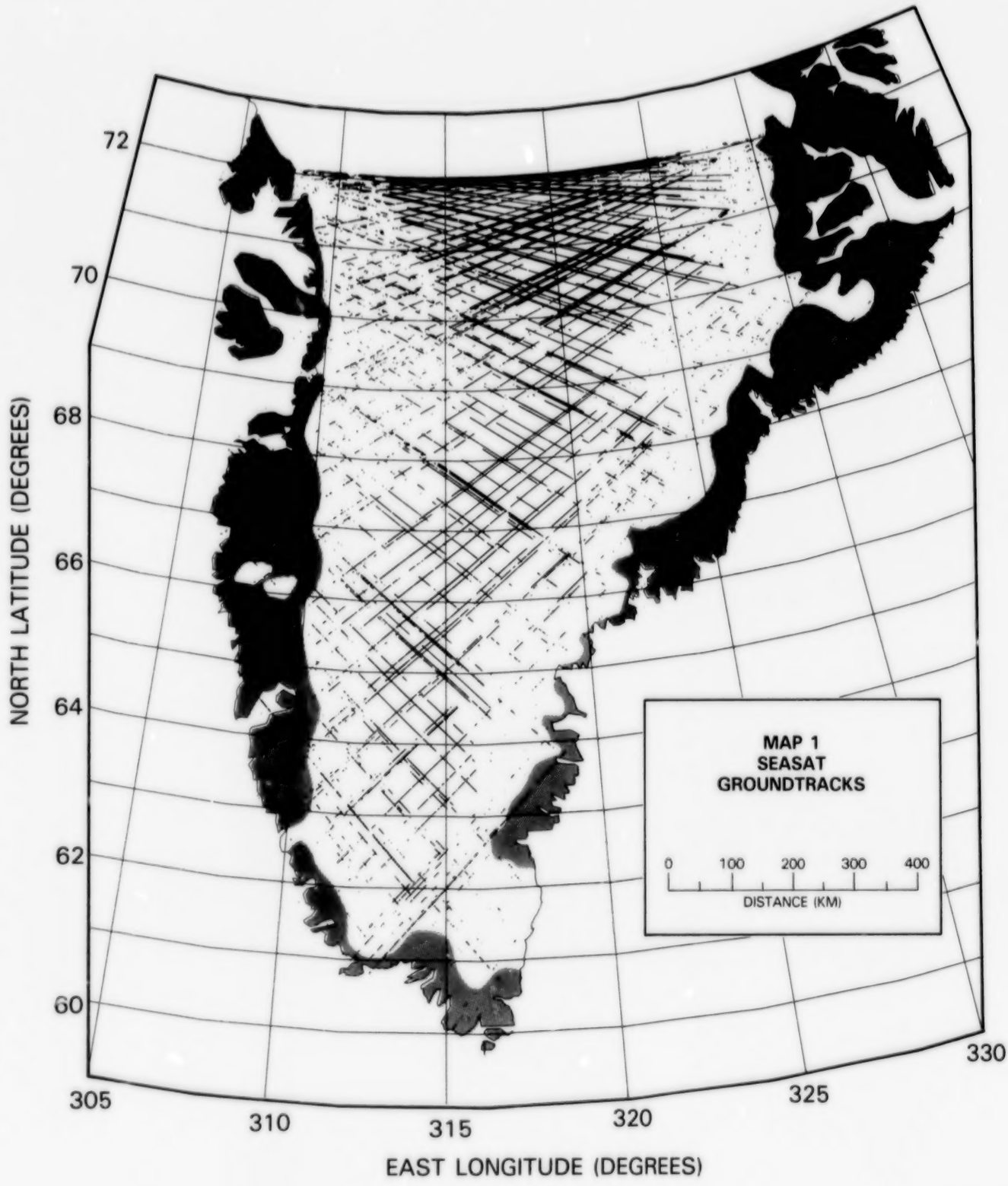
# APPENDIX A
# MAPS




**Map 1. Locations of useable Seasat range measurements. Continous data points are spaced 662 meters apart. In the rougher margins of Greenland, data are sparse. Shading in this and subsequent maps represents the portions of Greenland not covered by ice sheet. Projection of this and subsequent maps is polar stereographic.**

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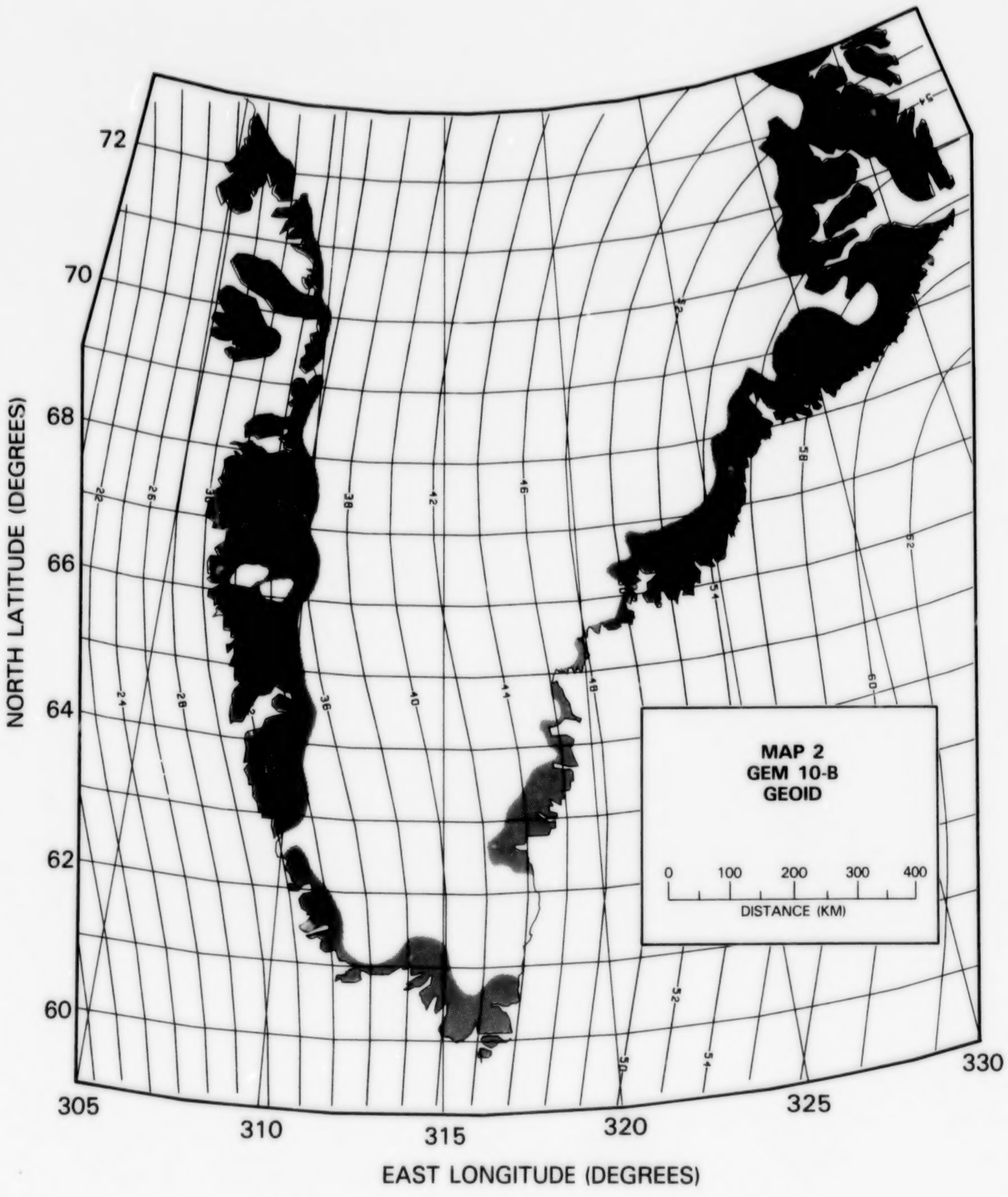
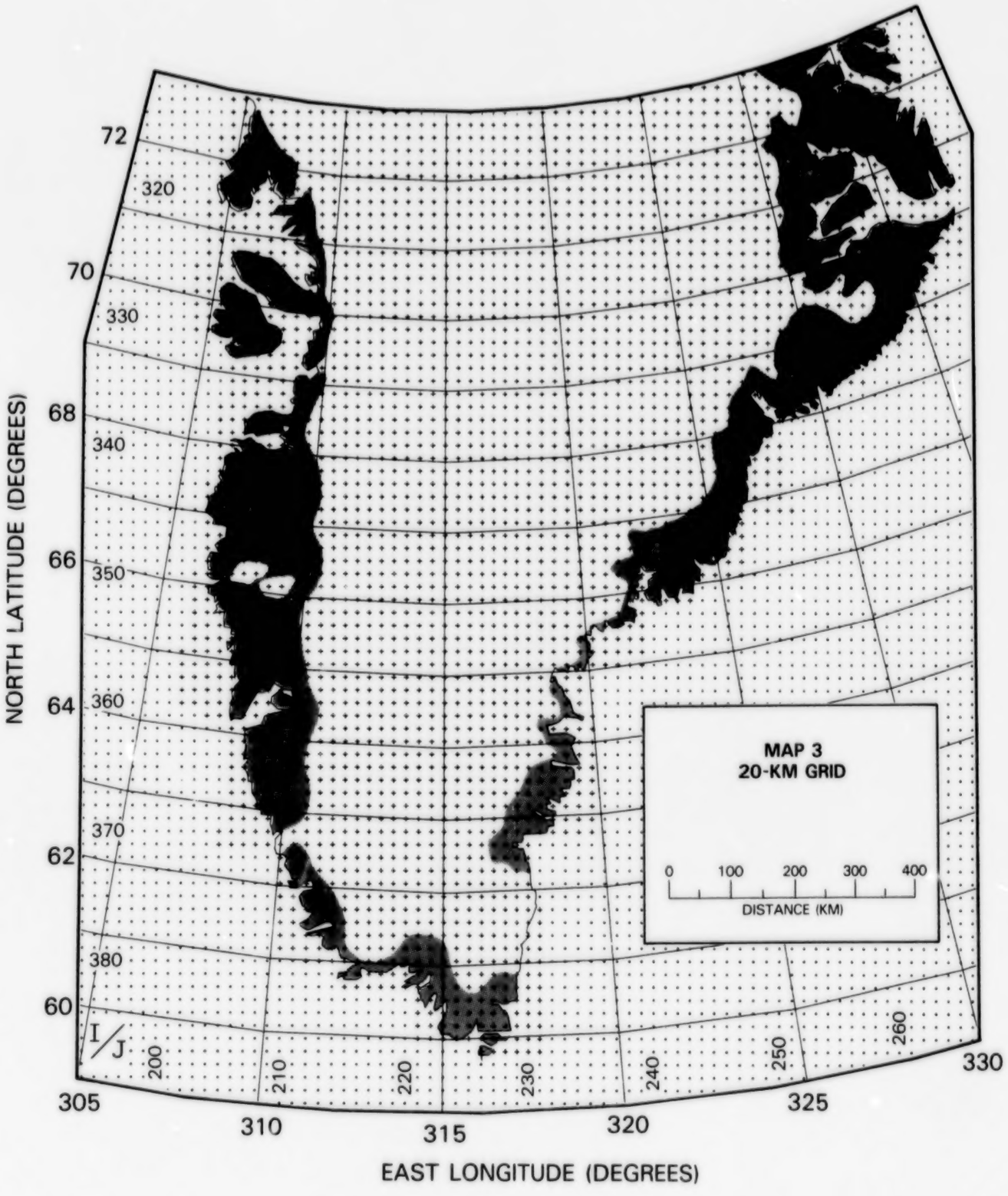
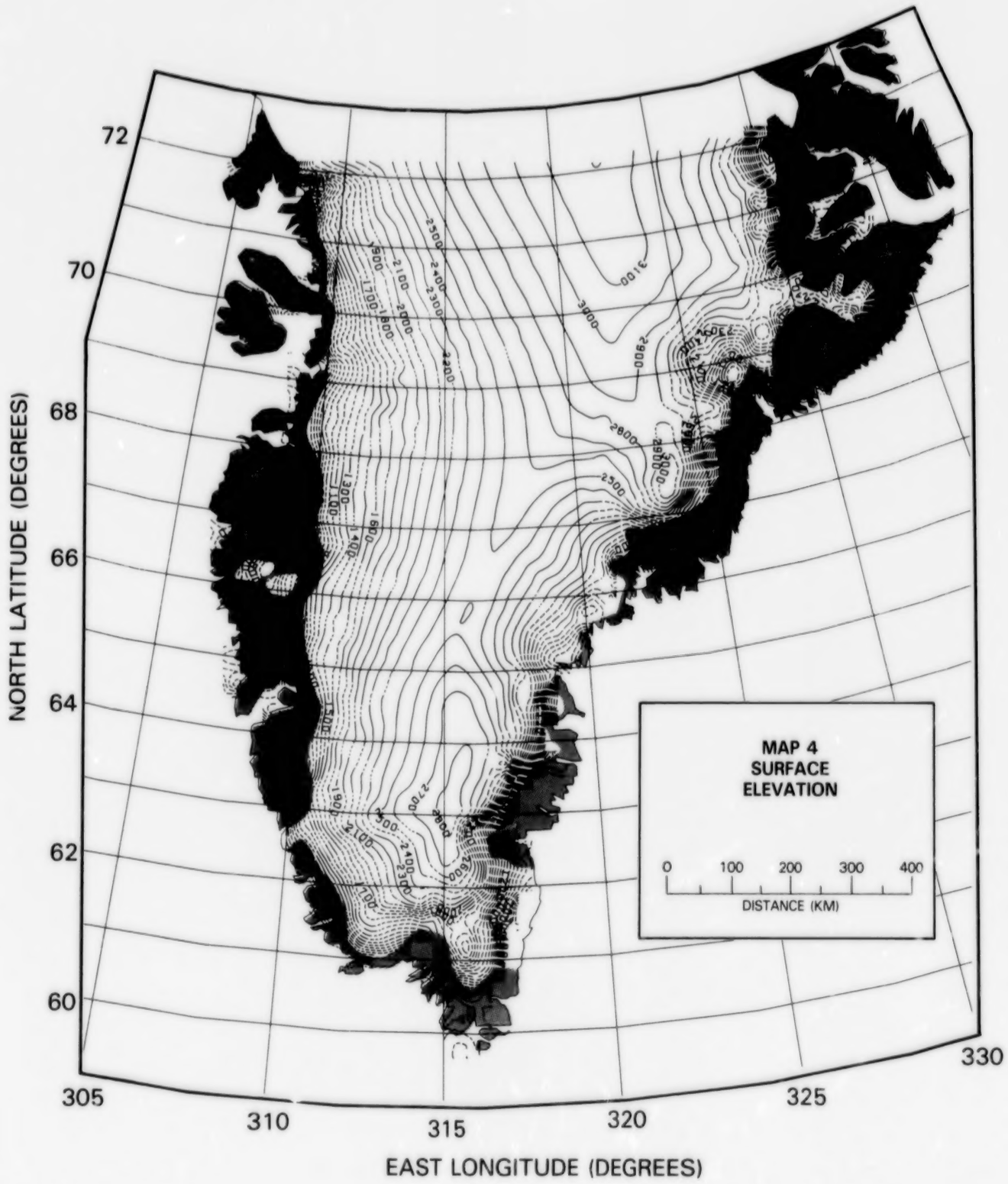


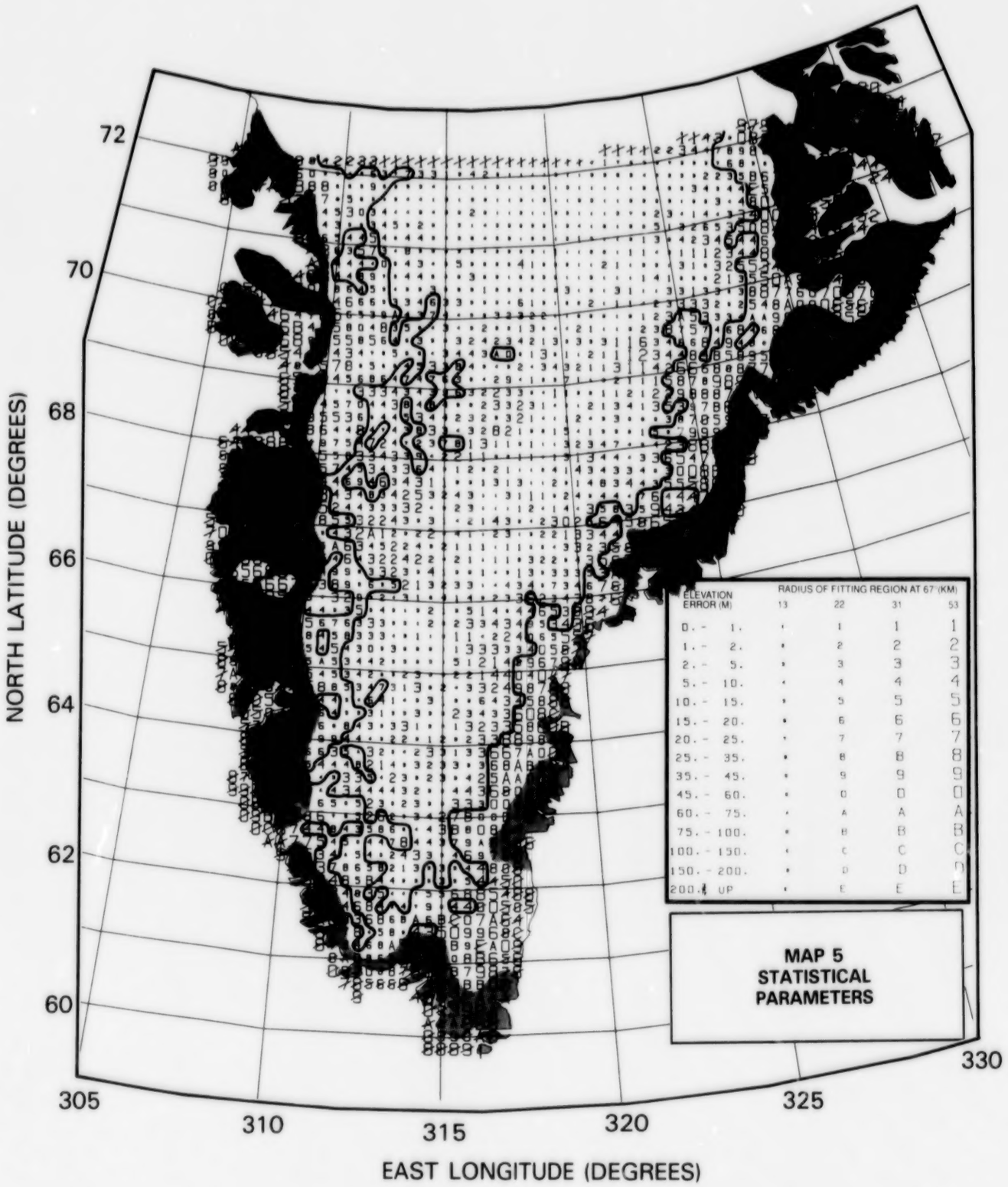

**Map 2. Contours of the GEM 10-B geoid in the Greenland region. Values are referenced to the IUGG-77 ellipsoid. Contour interval is 2 meters.**



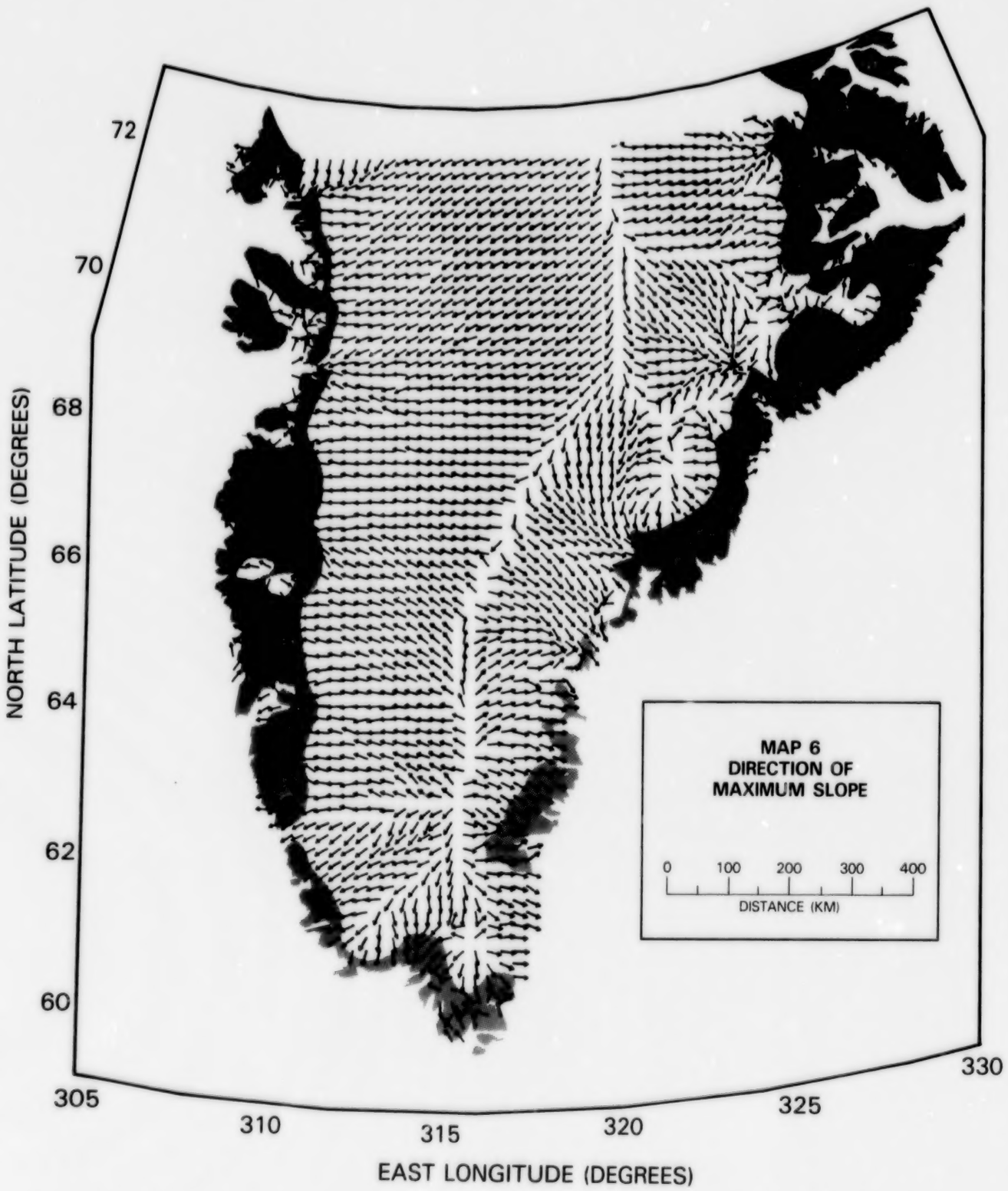

**Map 3. Regular grid superimposed on Greenland region. Spacing of gridpoints is 20 kilometers at 90° N. Rectangular axes provide unique coordinates (I, J) for each gridpoint (see Table 1). I- and J-axes are oriented roughly north-south and east-west, respectively.**



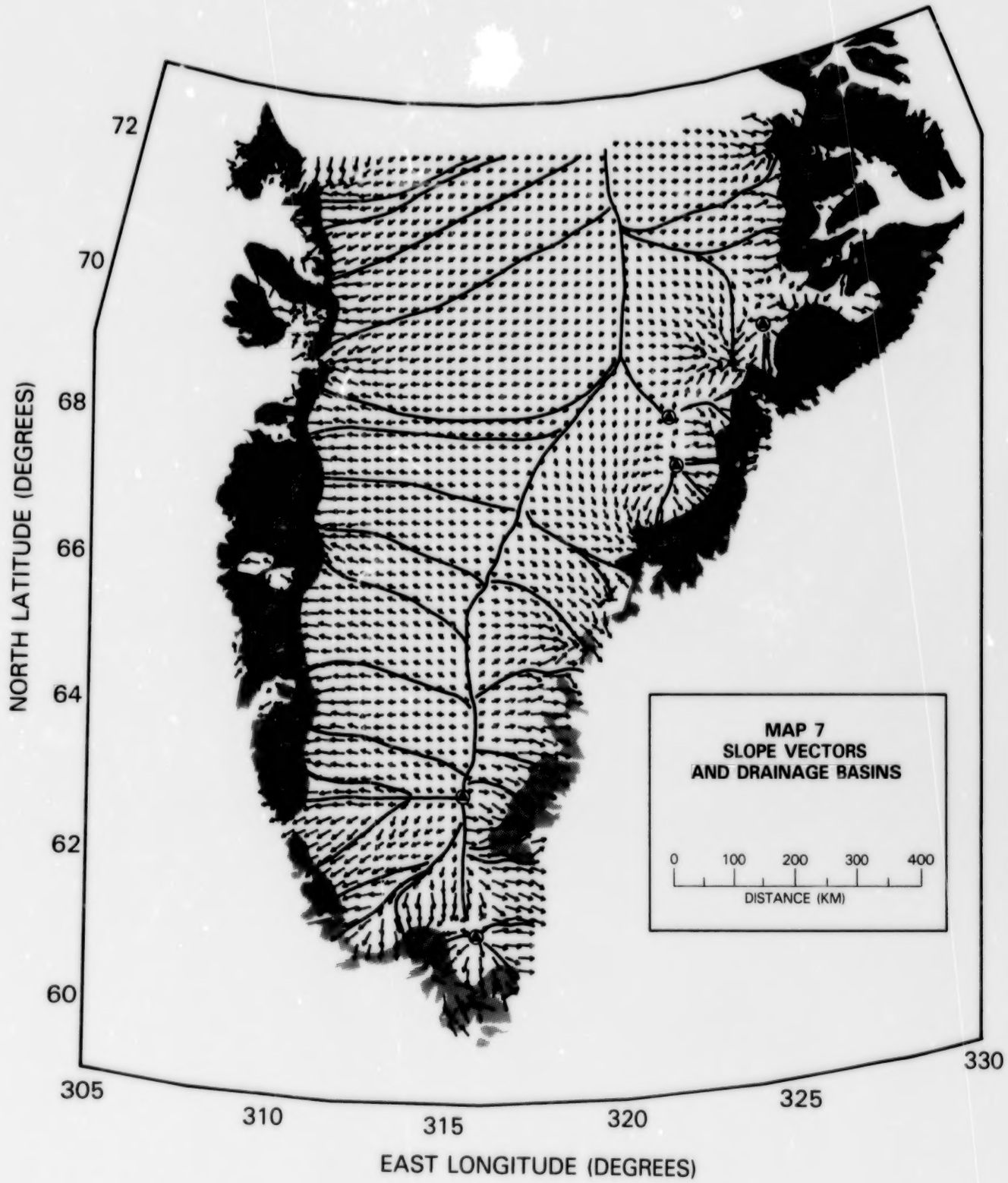

Map 4. Surface elevation contours of Greenland relative to mean sea level (as defined by the GEM 10-B geoid). Contour interval is 100 meters. Contour lines are dashed in areas where grid-elevation error (one standard deviation) exceeds ± 10 meters (see Map 5). Shaded areas are not covered by ice sheet. Some areas near the coast are not contoured due to sparsity of data.



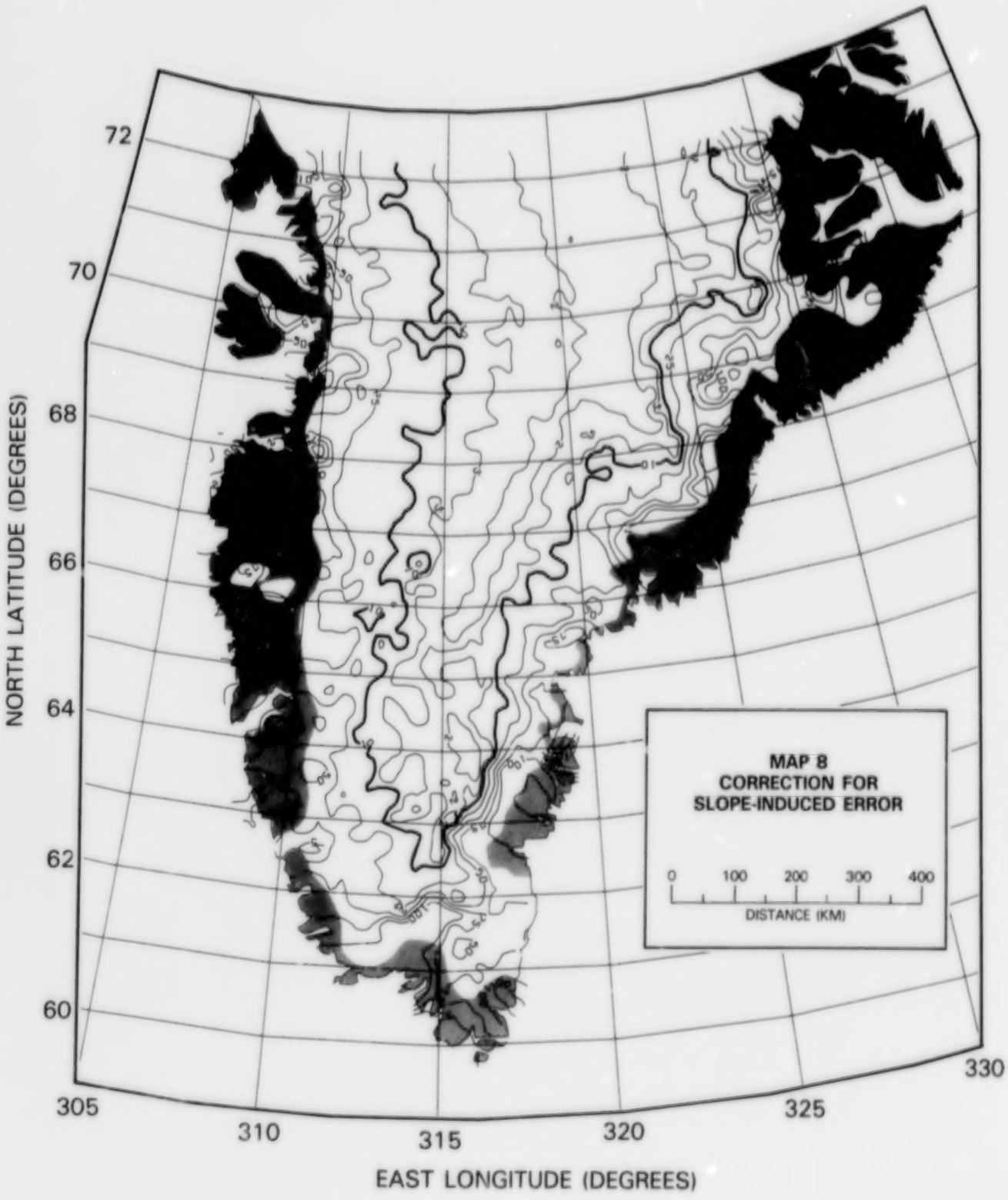

**Map 5. Statistical parameters of grid-elevation values. Physical size of number or letter indicates the size of fitting region used for interpolation at each gridpoint while numerical value or alphabetic order indicates the error (one standard deviation) for each grid elevation. Inset table gives the respective values of fitting region and elevation error for a particular number or letter. Radius of fitting region varies with latitude by a scaling factor equal to the cosine of the latitude. A slash through a number or letter indicates that a bilinear fit was used rather than a biquadratic fit as described in the text. Single contour is drawn at elevation error of ± 10 meters.**



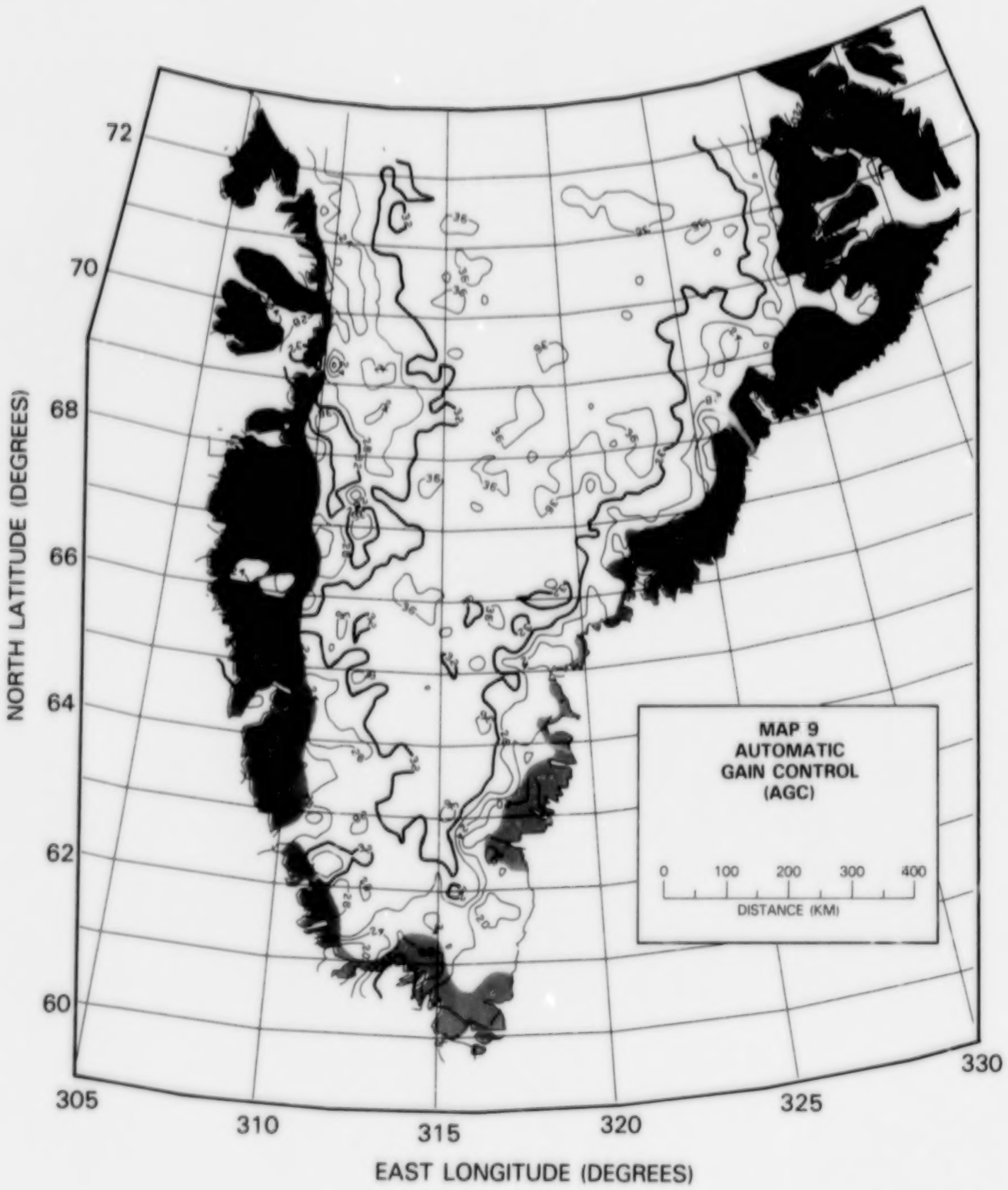

**Map 6. Azimuth of maximum slope at each gridpoint derived as centered-difference slope using grid-elevation data set. Slopes correspond to a 40-kilometer average and indicate direction of ice flow.**



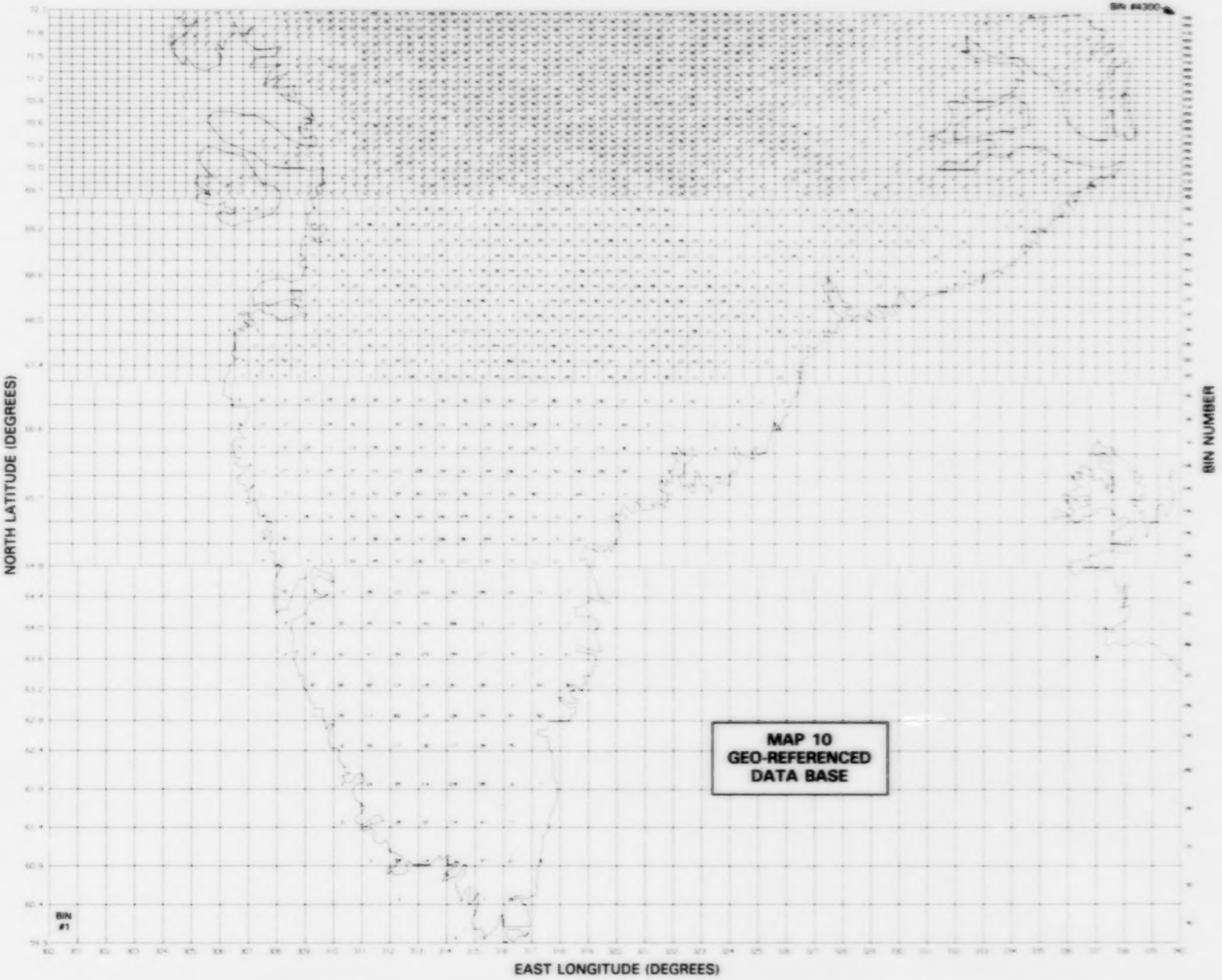

**Map 7. Drainage basins interpreted from slope-azimuth map (Map 6). Length of each vector in this map is scaled to magnitude of surface slope.**




Map 8. Contours of elevation correction for slope-induced error. Contour values are 2, 5, 10 (bold), 25, 50, 75, and 100 meters. Elevation correction values at each data point are calculated from Equation (1') and then gridded as described in the text.




**Map 9. Contours of Automatic Gain Control (AGC). Contour interval is 4 with bold line corresponding to a value of 32. Gridding procedure is similar to that used for slope-induced range corrections.**




Map. 10. Geographic distribution of bins comprising the geo-referenced data base. Numbers within boxes indicate number of individual data points in that bin. Bins with no number written inside the box contain no data. Numbers on the right border indicate the bin number of the rightmost bin in that row. Projection of this map is Mercator, not polar stereographic.

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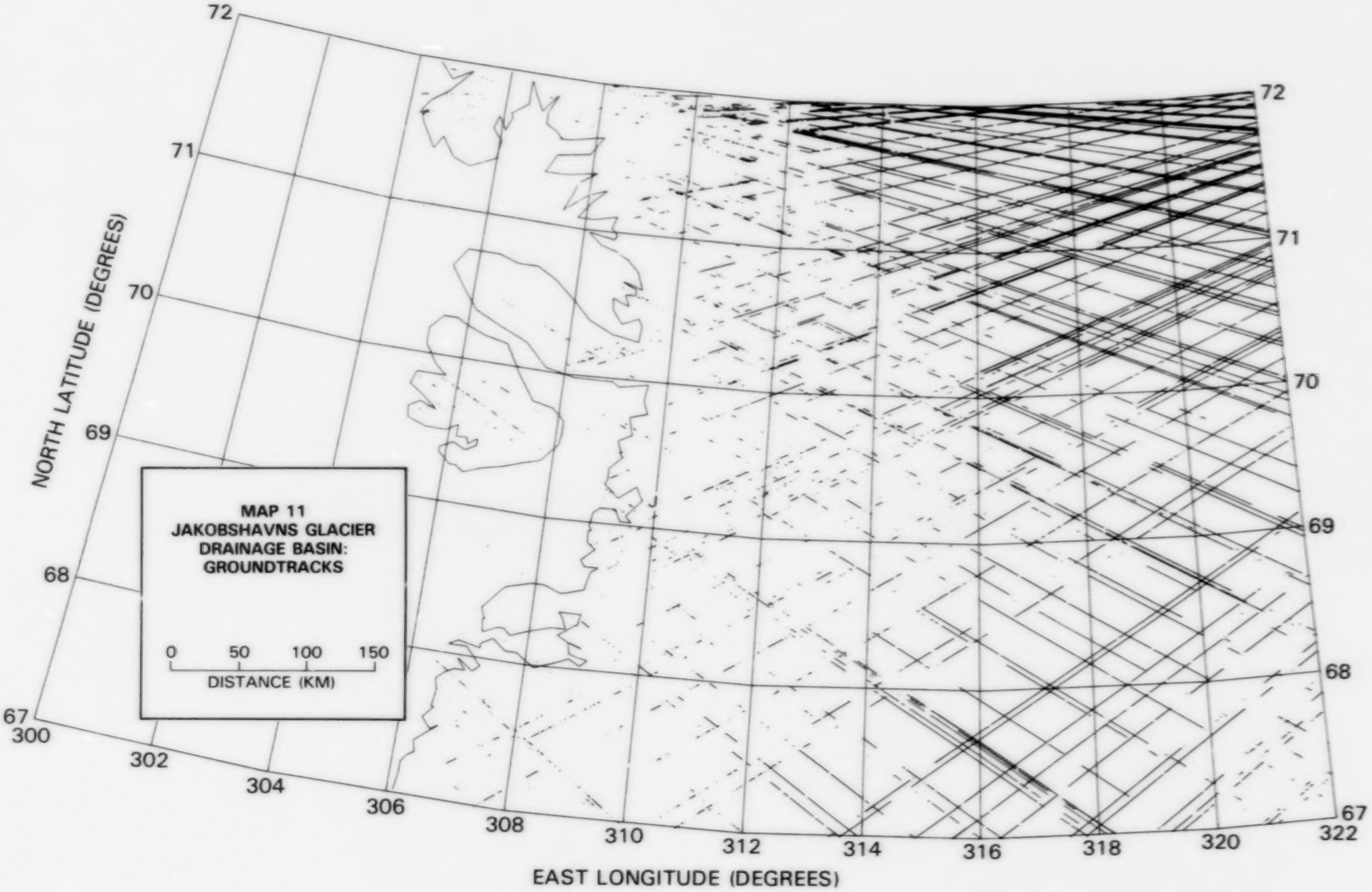


Map 11. Seasat altimeter data in the Jakobshavns Glacier region. Contiguous data spaced at intervals of 662 meters are connected by solid lines. Line breaks represent losses of track where no useful elevation data were collected. 'J' indicates the position of the lower reach of Jakobshavns Glacier.

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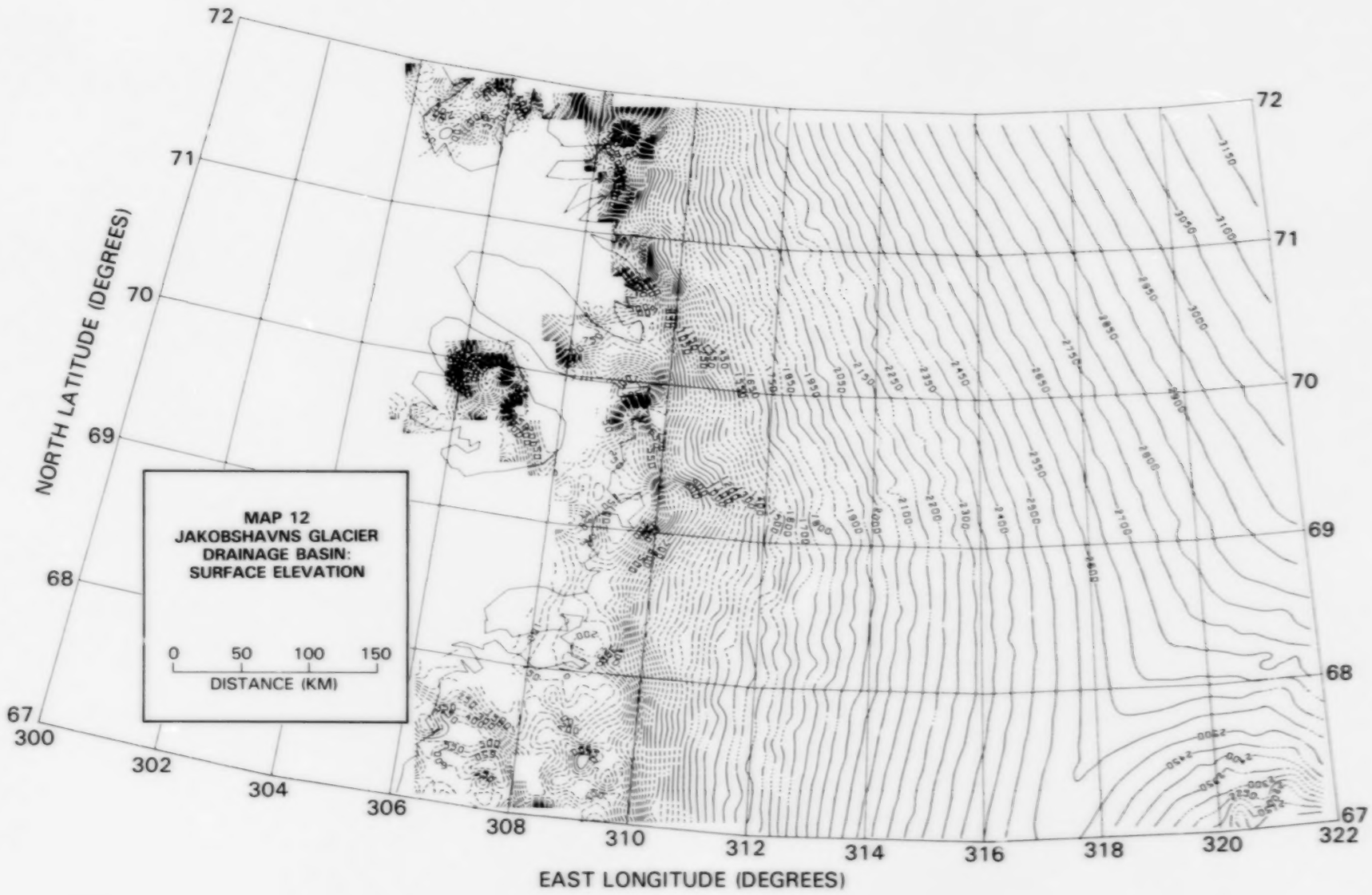


Map 12. Surface elevation contours of Jakobshavns Glacier region. Contour interval is 50 meters and elevations are referenced to mean sea level (as defined by the GEM10-B geoid). Contour lines are dashed in areas where error of grid elevations exceeds ±10 meters (see Map 13).

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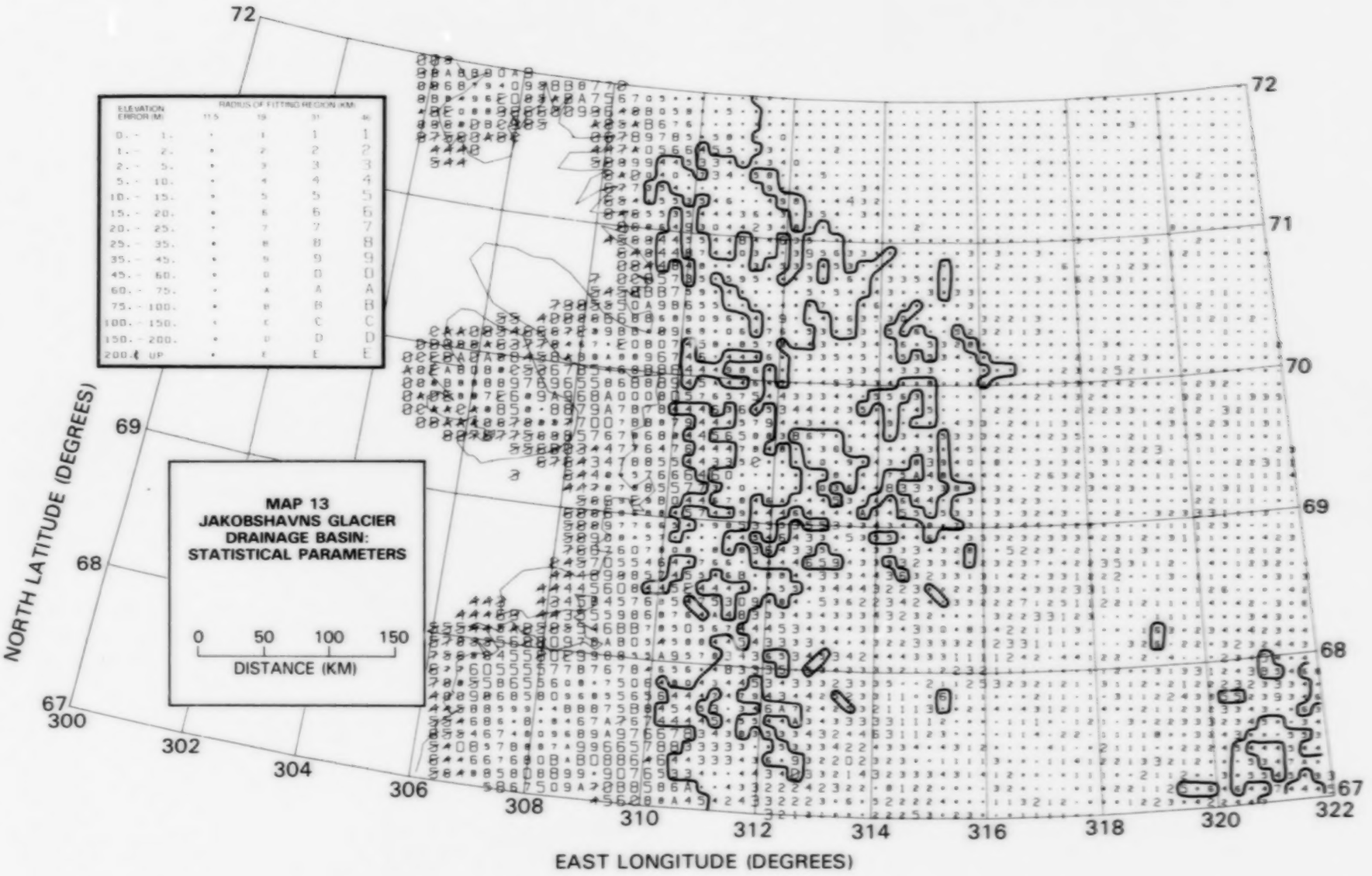


**Map 13. Statistical parameters of grid elevations calculated in Jakobshavns Glacier region (Map 12). Physical size of number or letter at each gridpoint indicates size of gridding region at that gridpoint. Numerical size or alphabetical order indicates magnitude of elevation error (one standard deviation) at each gridpoint. Inset table provides key to sizes of fitting regions and magnitudes of elevation errors. Solid line encloses extended areas where derived elevation error exceeds ± 10 meters.**

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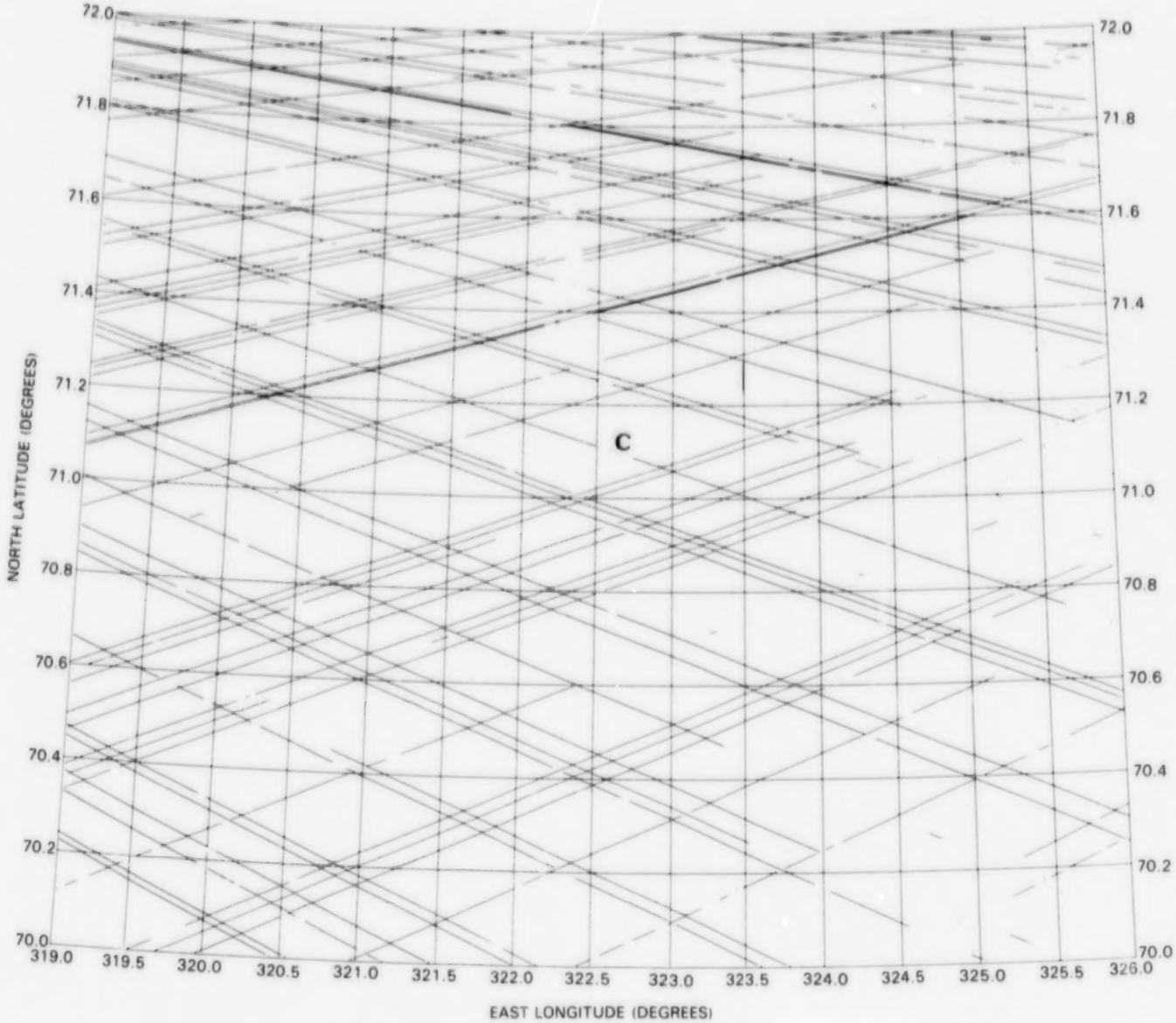


**MAP 14**
**CRETE STATION REGION:**
**GROUNDTRACKS**

0 20 40 60 80 100

DISTANCE (KM)

**Map 14. Seasat altimeter data used in region around Crete Station. Contiguous data spaced at intervals of 662 meters are connected by solid lines. Line breaks represent losses of track where no useful elevation data were collected. 'C' indicates position of Crete Station.**



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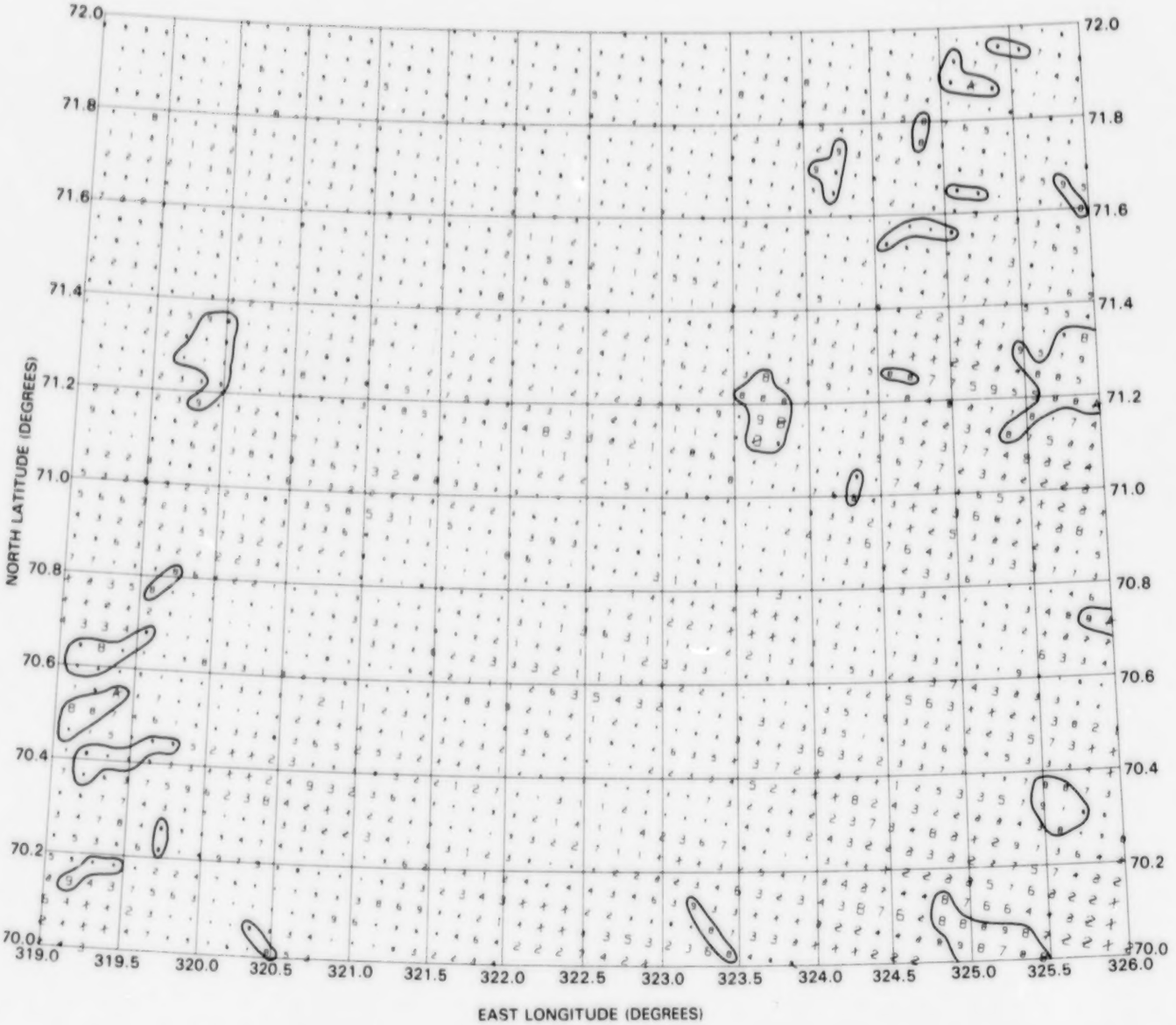


**MAP 15**
**CRETE STATION REGION:**
**STATISTICAL PARAMETERS**

0 20 40 60 80 100
DISTANCE (KM)

| ELEVATION ERROR (M) | RADIUS OF FITTING REGION (KM) 2.7 | 5.5 | 11 | 18 | 29 |
|---|---|---|---|---|---|
| 0.00 - 0.10 | | | 1 | 1 | 1 |
| 0.10 - 0.20 | | | 2 | 2 | 2 |
| 0.20 - 0.40 | | | 3 | 3 | 3 |
| 0.40 - 0.60 | | | 4 | 4 | 4 |
| 0.60 - 0.80 | | | 5 | 5 | 5 |
| 0.80 - 1.00 | | | 6 | 6 | 6 |
| 1.00 - 2.00 | | | 7 | 7 | 7 |
| 2.00 - 4.00 | | | 8 | 8 | 8 |
| 4.00 - 8.00 | | | 9 | 9 | 9 |
| 8.00 - 12.00 | | | 0 | 0 | 0 |
| 12.00 - 20.00 | | | A | A | A |
| 20.00&Up | | | B | B | B |

**Map 15. Statistical parameters of grid elevations in region around Crete Station (Map 16). Physical size of number or letter at each gridpoint indicates size of gridding region at that gridpoint. Numerical size or alphabetical order indicates magnitude of elevation error (one standard deviation) at each gridpoint. Inset table provides key to sizes of fitting regions and magnitudes of elevation errors. Solid line encloses extended areas where derived elevation error exceeds ± 2 meters.**

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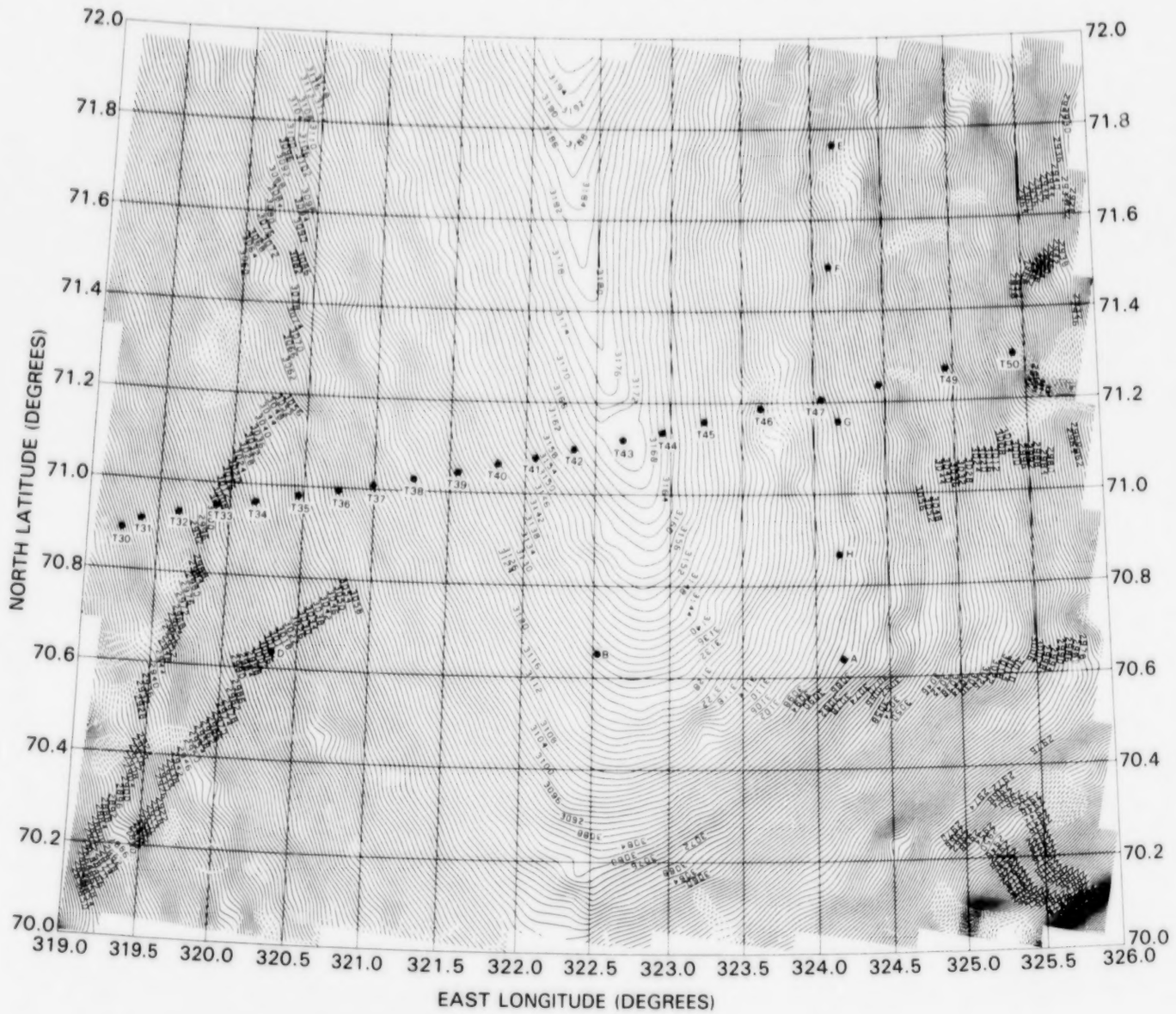
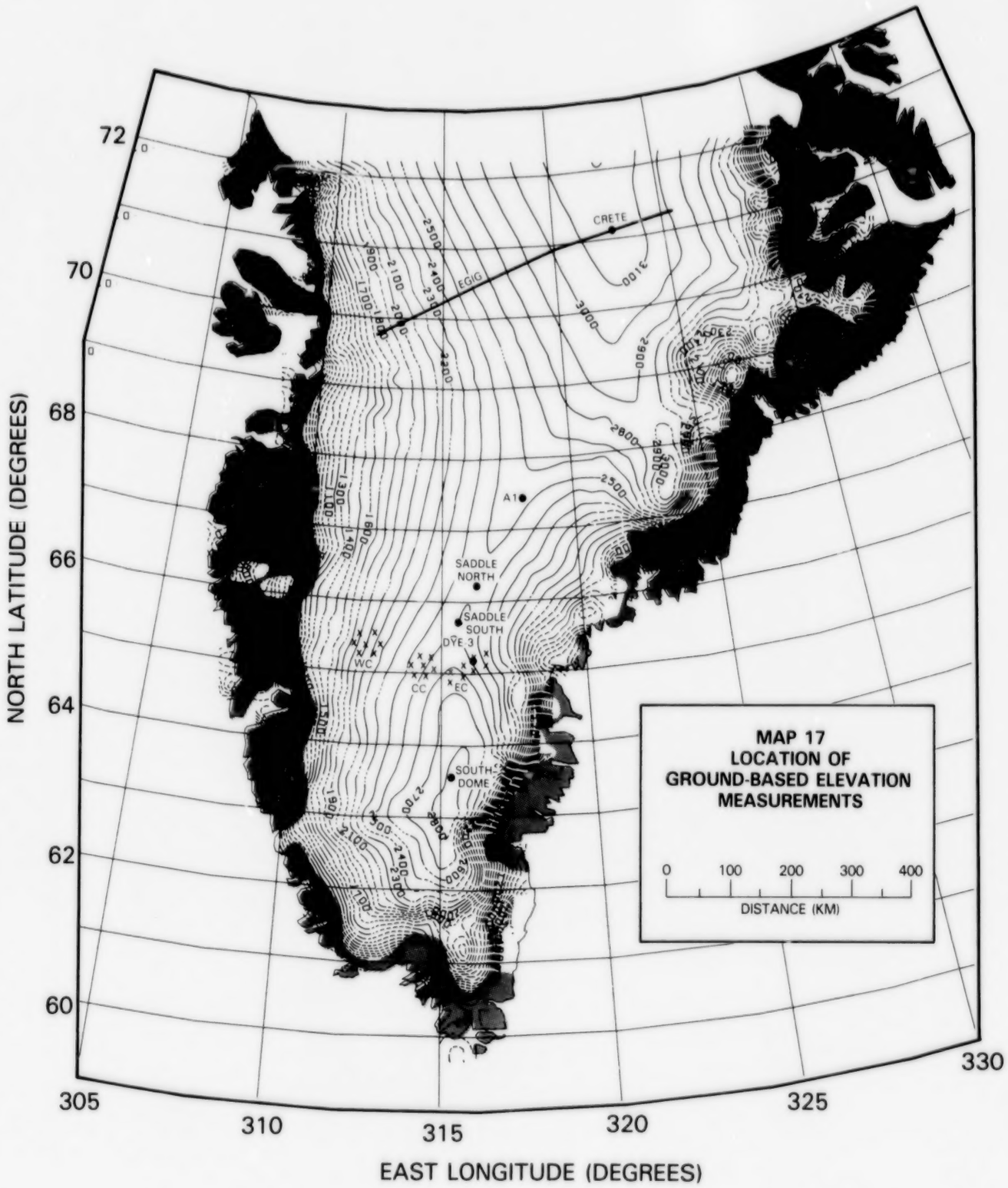



**MAP 16**
**CRETE STATION REGION:**
**SURFACE ELEVATION**

0 20 40 60 80 100

DISTANCE (KM)

**Map 16. Surface elevation of Crete Station region. Contour interval is 2 meters and elevations are referenced to mean sea level. Contour lines are dashed in areas where error of grid elevation exceeds ± 2 meters. Solid circles show positions of Danish geoceivers and EGIG surface markers (see Tables 4 and 6).**




**Map 17. Locations of geoceiver sites occupied by Mock (solid circles) and OSU (X). Heavy solid line indicates position of EGIG line.**

# APPENDIX B
# TABLES

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Table 1

Gridpoint values of location (I, J; see Map 3), latitude, longitude, slope-corrected surface elevation, elevation error (one standard deviation), GEM 10-B geoid, and total slope correction (see Equation 1').

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 318 | 204 | 71.9148 | 303.6899 | 267.57 | 38.68 | 26.03 | −35.74 |
| 319 | 204 | 71.7348 | 303.8047 | 49.88 | 40.26 | 26.12 | −33.81 |
| 330 | 204 | 69.7566 | 304.9309 | 242.77 | 50.51 | 27.56 | −169.22 |
| 331 | 204 | 69.5770 | 305.0222 | 20.55 | 90.32 | 27.75 | 41.65 |
| 345 | 204 | 67.0690 | 306.1479 | 266.55 | 6.54 | 30.02 | 29.96 |
| 346 | 204 | 66.8904 | 306.2187 | 214.18 | 12.96 | 30.09 | 36.78 |
| 347 | 204 | 66.7119 | 306.2883 | 49.37 | 22.99 | 30.13 | −23.78 |
| 348 | 204 | 66.5335 | 306.3572 | 128.49 | 43.18 | 30.17 | 0.96 |
| 349 | 204 | 66.3551 | 306.4246 | 29.97 | 46.98 | 30.20 | −2.44 |
| 318 | 205 | 71.9499 | 304.2710 | 9.59 | 44.76 | 26.92 | −65.67 |
| 319 | 205 | 71.7695 | 304.3801 | 268.98 | 48.48 | 27.00 | 266.99 |
| 320 | 205 | 71.5891 | 304.4873 | 91.44 | 75.60 | 27.09 | −37.18 |
| 321 | 205 | 71.4088 | 304.5923 | −5.17 | 15.94 | 27.18 | −127.75 |
| 329 | 205 | 69.9676 | 305.3623 | −4.99 | 69.61 | 28.25 | −94.40 |
| 330 | 205 | 69.7876 | 305.4507 | −49.65 | 177.67 | 28.44 | −183.27 |
| 331 | 205 | 69.6078 | 305.5376 | 268.63 | 73.65 | 28.63 | −90.69 |
| 332 | 205 | 69.4279 | 305.6228 | 152.27 | 58.58 | 28.81 | 37.22 |
| 340 | 205 | 67.9915 | 306.2537 | 24.50 | 16.10 | 30.23 | −73.44 |
| 341 | 205 | 67.8123 | 306.3267 | 145.16 | 17.48 | 30.35 | −46.58 |
| 342 | 205 | 67.6331 | 306.3984 | 367.77 | 35.43 | 30.47 | −36.32 |
| 343 | 205 | 67.4541 | 306.4690 | 290.70 | 4.36 | 30.58 | 18.85 |
| 344 | 205 | 67.2751 | 306.5386 | 580.85 | 8.78 | 30.70 | 6.86 |
| 345 | 205 | 67.0961 | 306.6069 | 412.68 | 8.49 | 30.81 | −33.26 |
| 346 | 205 | 66.9173 | 306.6743 | 333.36 | 15.44 | 30.89 | 10.81 |
| 347 | 205 | 66.7385 | 306.7405 | 186.22 | 61.74 | 30.93 | −63.53 |
| 348 | 205 | 66.5599 | 306.8057 | 339.11 | 88.04 | 30.96 | 22.74 |
| 349 | 205 | 66.3813 | 306.8699 | 188.01 | 60.58 | 30.99 | −27.53 |
| 350 | 205 | 66.2028 | 306.9329 | −90.52 | 22.23 | 31.02 | −114.87 |
| 351 | 205 | 66.0244 | 306.9951 | 193.47 | 4.19 | 31.05 | −14.78 |
| 352 | 205 | 65.8461 | 307.0564 | 166.30 | 61.33 | 30.99 | −18.34 |
| 353 | 205 | 65.6678 | 307.1167 | 121.36 | 7.64 | 30.93 | −15.93 |
| 356 | 205 | 65.1337 | 307.2925 | 222.15 | 13.49 | 30.73 | 106.62 |
| 357 | 205 | 64.9559 | 307.3491 | 93.19 | 26.52 | 30.65 | −0.63 |
| 358 | 205 | 64.7781 | 307.4053 | 258.85 | 24.91 | 30.51 | −63.31 |
| 359 | 205 | 64.6005 | 307.4604 | 409.41 | 28.82 | 30.37 | 336.78 |
| 317 | 206 | 72.1639 | 304.7488 | −12.22 | 61.09 | 27.74 | −47.57 |
| 318 | 206 | 71.9831 | 304.8542 | 109.80 | 37.54 | 27.79 | −81.37 |
| 319 | 206 | 71.8024 | 304.9578 | 446.57 | 59.73 | 27.88 | −29.23 |
| 320 | 206 | 71.6217 | 305.0593 | 175.39 | 179.35 | 27.97 | −44.83 |
| 321 | 205 | 71.4410 | 305.1587 | 106.20 | 44.52 | 28.06 | −145.27 |
| 329 | 206 | 69.9973 | 305.8884 | 405.67 | 179.27 | 29.13 | −82.19 |
| 330 | 206 | 69.8171 | 305.9722 | 619.41 | 588.99 | 29.31 | −61.32 |
| 331 | 206 | 69.6369 | 306.0544 | 344.60 | 93.47 | 29.49 | −107.19 |
| 339 | 206 | 68.1979 | 306.6624 | −51.31 | 8.17 | 30.88 | −77.06 |
| 340 | 206 | 68.0184 | 306.7327 | 31.28 | 9.90 | 31.04 | −63.86 |
| 341 | 206 | 67.8389 | 306.8018 | 153.95 | 20.21 | 31.16 | −45.96 |
| 342 | 206 | 67.6595 | 306.8699 | 311.00 | 58.54 | 31.28 | −22.70 |
| 343 | 206 | 67.4802 | 306.9365 | 536.19 | 18.25 | 31.39 | −22.51 |
| 344 | 206 | 67.3010 | 307.0024 | 603.03 | 38.02 | 31.50 | −5.47 |
| 345 | 206 | 67.1218 | 307.0671 | 562.94 | 63.26 | 31.60 | 15.65 |
| 346 | 206 | 66.9428 | 307.1309 | 417.89 | 31.56 | 31.68 | −68.30 |
| 347 | 206 | 66.7638 | 307.1934 | 50.85 | 29.20 | 31.70 | −139.13 |
| 348 | 206 | 66.5849 | 307.2551 | 460.47 | 16.99 | 31.72 | −90.64 |
| 349 | 206 | 66.4061 | 307.3159 | 441.08 | 7.57 | 31.74 | −70.89 |
| 350 | 206 | 66.2274 | 307.3757 | 339.13 | 17.41 | 31.76 | −68.70 |
| 351 | 206 | 66.0488 | 307.4346 | 475.67 | 17.85 | 31.78 | −72.07 |
| 352 | 206 | 65.8703 | 307.4924 | 346.88 | 76.39 | 31.74 | −37.87 |


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Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 353 | 206 | 65.6918 | 307.5496 | 258.74 | 12.49 | 31.67 | −24.12 |
| 354 | 206 | 65.5135 | 307.6060 | 109.19 | 73.33 | 31.60 | −12.50 |
| 355 | 206 | 65.3353 | 307.6614 | 125.08 | 5.83 | 31.53 | −12.32 |
| 356 | 206 | 65.1572 | 307.7158 | 141.08 | 7.79 | 31.46 | −23.81 |
| 357 | 206 | 64.9791 | 307.7695 | 11.38 | 38.40 | 31.38 | −10.26 |
| 358 | 206 | 64.8012 | 307.8228 | 200.68 | 84.96 | 31.24 | −19.14 |
| 359 | 206 | 64.6234 | 307.8748 | 57.86 | 90.36 | 31.10 | −196.42 |
| 360 | 206 | 64.4456 | 307.9263 | 550.20 | 25.21 | 30.97 | 583.04 |
| 317 | 207 | 72.1957 | 305.3401 | 613.20 | 105.68 | 28.60 | 1613.20 |
| 318 | 207 | 72.0146 | 305.4397 | 511.97 | 782.14 | 28.64 | −157.92 |
| 319 | 207 | 71.8335 | 305.5376 | 156.48 | 27.63 | 28.73 | −88.07 |
| 320 | 207 | 71.6525 | 305.6333 | 320.26 | 80.02 | 28.82 | 40.22 |
| 321 | 207 | 71.4715 | 305.7273 | 206.91 | 82.44 | 28.92 | −211.22 |
| 328 | 207 | 70.2060 | 306.3357 | 278.92 | 11.17 | 29.83 | −88.66 |
| 329 | 207 | 70.0254 | 306.4163 | 994.11 | 25.15 | 29.98 | −69.76 |
| 330 | 207 | 69.8449 | 306.4954 | 1055.74 | 56.09 | 30.15 | −79.64 |
| 331 | 207 | 69.6645 | 306.5730 | 577.75 | 48.61 | 30.33 | −90.64 |
| 332 | 207 | 69.4841 | 306.6492 | −126.61 | 59.20 | 30.51 | 873.39 |
| 339 | 207 | 68.2235 | 307.1465 | 11.98 | 9.46 | 31.68 | −34.83 |
| 340 | 207 | 68.0437 | 307.2129 | −52.76 | 17.77 | 31.84 | −105.25 |
| 341 | 207 | 67.8640 | 307.2781 | −6.79 | 17.38 | 31.96 | −64.35 |
| 342 | 207 | 67.6844 | 307.3423 | 180.47 | 45.00 | 32.06 | −67.12 |
| 343 | 207 | 67.5049 | 307.4053 | 426.08 | 10.16 | 32.16 | −59.64 |
| 344 | 207 | 67.3254 | 307.4673 | 670.87 | 22.88 | 21.26 | −54.42 |
| 345 | 207 | 67.1461 | 307.5283 | 578.86 | 12.79 | 32.36 | −31.58 |
| 346 | 207 | 66.9668 | 307.5884 | 430.07 | 33.35 | 32.44 | −97.5[illegible] |
| 347 | 207 | 66.7876 | 307.6475 | 277.24 | 80.82 | 32.46 | −18.[illegible]C |
| 348 | 207 | 66.6085 | 307.7056 | 332.84 | 22.50 | 32.47 | −52.6[illegible] |
| 349 | 207 | 66.4295 | 307.7629 | 585.82 | 34.45 | 32.49 | −116.02 |
| 350 | 207 | 66.2506 | 308.8193 | 777.41 | 14.14 | 32.50 | −61.64 |
| 351 | 207 | 66.0718 | 307.8748 | 603.38 | 10.54 | 32.51 | −85.22 |
| 352 | 207 | 65.8931 | 307.9294 | 796.71 | 29.54 | 32.48 | 163.81 |
| 353 | 207 | 65.7145 | 307.9834 | 472.91 | 21.90 | 32.41 | 371.00 |
| 354 | 207 | 65.5360 | 308.0364 | 262.31 | 14.94 | 32.33 | 76.69 |
| 355 | 207 | 65.3576 | 308.0886 | 191.55 | 6.76 | 32.25 | −93.18 |
| 356 | 207 | 65.1793 | 308.1401 | 191.54 | 18.20 | 32.17 | −19.74 |
| 357 | 207 | 65.0010 | 308.1909 | 52.17 | 18.34 | 32.10 | −13.30 |
| 358 | 207 | 64.8229 | 308.2407 | 174.22 | 26.13 | 31.95 | 16.03 |
| 359 | 207 | 64.6449 | 308.2900 | 286.00 | 88.71 | 31.81 | −84.16 |
| 360 | 207 | 64.4671 | 308.3386 | 573.07 | 24.38 | 31.67 | 196.51 |
| 362 | 207 | 64.1116 | 308.4336 | 80.92 | 11.87 | 31.38 | 0.49 |
| 363 | 207 | 63.9340 | 308.4800 | 207.44 | 31.23 | 31.23 | 132.30 |
| 364 | 207 | 63.7566 | 308.5259 | −11.53 | 13.60 | 31.06 | −19.79 |
| 365 | 207 | 63.5792 | 308.5710 | −4.59 | 76.86 | 30.89 | −33.32 |
| 366 | 207 | 63.4020 | 308.6157 | −107.12 | 24.22 | 30.72 | −59.68 |
| 367 | 207 | 63.2249 | 308.6597 | −104.74 | 43.47 | 30.55 | −87.69 |
| 318 | 208 | 72.0441 | 306.0273 | 378.54 | 31.53 | 29.49 | −30.05 |
| 319 | 208 | 71.8627 | 306.1191 | 268.32 | 29.82 | 29.57 | −45.60 |
| 320 | 208 | 71.6814 | 306.2092 | 118.21 | 20.37 | 29.66 | −45.65 |
| 328 | 208 | 70.2326 | 306.8699 | 459.41 | 6.41 | 30.67 | −78.66 |
| 329 | 208 | 70.0518 | 306.9456 | 579.48 | 12.04 | 30.82 | −84.70 |
| 330 | 208 | 69.8711 | 307.0198 | 925.79 | 35.50 | 30.99 | −100.44 |
| 331 | 208 | 69.6904 | 307.0928 | 468.50 | 30.57 | 31.16 | 109.48 |
| 332 | 208 | 69.5098 | 307.1643 | 205.32 | 53.06 | 31.34 | −56.52 |
| 340 | 208 | 68.0675 | 307.6941 | 75.85 | 47.93 | 32.61 | −35.24 |
| 341 | 208 | 67.8876 | 307.7554 | −5.03 | 11.90 | 32.73 | −30.36 |
| 342 | 208 | 67.7078 | 307.8157 | 40.85 | 10.86 | 32.83 | −53.09 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM 10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 343 | 208 | 67.5281 | 307.8748 | 172.84 | 61.82 | 32.92 | −61.39 |
| 344 | 208 | 67.3484 | 307.9331 | 745.19 | 17.61 | 33.02 | −74.96 |
| 345 | 208 | 67.1689 | 307.9905 | 536.76 | 57.94 | 33.11 | −9.21 |
| 346 | 208 | 66.9894 | 308.0469 | 607.28 | 18.03 | 33.19 | 66.25 |
| 347 | 208 | 66.8100 | 308.1025 | 203.73 | 40.76 | 33.20 | −90.47 |
| 348 | 208 | 66.6307 | 308.1570 | 274.65 | 15.36 | 33.21 | −49.28 |
| 349 | 208 | 66.4516 | 308.2109 | 864.65 | 16.87 | 33.21 | −93.60 |
| 350 | 208 | 66.2725 | 308.2639 | 1066.34 | 19.12 | 33.22 | −40.52 |
| 351 | 208 | 66.0935 | 308.3159 | 974.85 | 15.86 | 33.22 | −226.22 |
| 352 | 208 | 65.9146 | 308.3674 | 821.93 | 232.17 | 33.18 | −14.11 |
| 353 | 208 | 65.7358 | 308.4180 | 447.48 | 86.19 | 33.10 | 108.71 |
| 354 | 208 | 65.5571 | 308.4678 | 299.38 | 44.66 | 33.02 | −14.47 |
| 355 | 208 | 65.3785 | 308.5168 | 239.65 | 15.77 | 32.94 | −19.58 |
| 356 | 208 | 65.2000 | 308.5652 | 240.09 | 46.51 | 32.86 | −21.48 |
| 357 | 208 | 65.0217 | 308.6128 | 193.46 | 7.97 | 32.78 | −60.56 |
| 358 | 208 | 64.8434 | 308.6597 | 99.24 | 28.19 | 32.65 | −2.92 |
| 359 | 208 | 64.6652 | 308.7058 | 293.54 | 13.02 | 32.50 | 25.87 |
| 360 | 208 | 64.4872 | 308.7515 | 500.38 | 116.32 | 32.36 | −44.65 |
| 361 | 208 | 64.3092 | 308.7964 | 472.54 | 15.84 | 32.22 | −82.65 |
| 362 | 208 | 64.1314 | 308.8408 | 69.06 | 21.11 | 32.08 | −396.28 |
| 363 | 208 | 63.9537 | 308.8843 | 286.25 | 20.29 | 31.93 | 109.38 |
| 364 | 208 | 63.7761 | 308.9275 | 136.17 | 22.24 | 31.76 | −29.09 |
| 365 | 208 | 63.5986 | 308.9700 | 186.29 | 26.57 | 31.59 | 19.46 |
| 366 | 208 | 63.4212 | 309.0117 | 198.78 | 19.86 | 31.43 | −392.02 |
| 367 | 208 | 63.2439 | 309.0530 | 175.13 | 163.62 | 31.26 | −51.08 |
| 368 | 208 | 63.0668 | 309.0937 | 60.61 | 91.26 | 31.09 | −94.72 |
| 369 | 208 | 62.8898 | 309.1338 | −75.14 | 41.07 | 30.93 | −105.08 |
| 319 | 209 | 71.8902 | 306.7026 | 214.49 | 60.50 | 30.39 | −41.10 |
| 320 | 209 | 71.7085 | 306.7871 | 240.20 | 61.24 | 30.49 | 74.90 |
| 328 | 209 | 70.2576 | 307.4053 | 334.26 | 48.71 | 31.49 | −88.28 |
| 329 | 209 | 70.0766 | 307.4761 | 362.09 | 22.38 | 31.64 | −145.38 |
| 330 | 209 | 69.8956 | 307.5457 | 480.43 | 10.14 | 31.80 | −42.64 |
| 331 | 209 | 69.7146 | 307.6138 | −12.80 | 239.17 | 31.97 | −72.38 |
| 332 | 209 | 69.5338 | 307.6809 | 77.68 | 24.25 | 32.14 | −259.28 |
| 333 | 209 | 69.3530 | 307.7466 | 101.87 | 85.21 | 32.31 | 24.71 |
| 338 | 209 | 68.4503 | 308.0588 | 69.91 | 7.15 | 33.09 | −53.67 |
| 339 | 209 | 68.2701 | 308.1182 | 110.72 | 5.38 | 33.23 | −36.22 |
| 340 | 209 | 68.0899 | 308.1765 | 165.29 | 31.53 | 33.38 | −8.60 |
| 341 | 209 | 67.9097 | 308.2336 | 152.74 | 29.64 | 33.49 | −4.65 |
| 342 | 209 | 67.7297 | 308.2900 | 211.94 | 27.84 | 33.58 | −1.32 |
| 343 | 209 | 67.5498 | 308.3455 | 322.53 | 34.64 | 33.66 | −11.99 |
| 344 | 209 | 67.3699 | 308.3999 | 214.20 | 92.82 | 33.74 | −19.97 |
| 345 | 209 | 67.1902 | 308.4536 | 304.48 | 69.93 | 33.83 | −27.41 |
| 346 | 209 | 67.0105 | 308.5063 | 618.97 | 28.31 | 33.91 | 233.31 |
| 347 | 209 | 66.8310 | 308.5583 | 305.65 | 56.32 | 33.91 | −9.29 |
| 348 | 209 | 66.6515 | 308.6094 | 599.91 | 16.76 | 33.92 | −77.59 |
| 349 | 209 | 66.4722 | 308.6597 | 946.27 | 28.02 | 33.92 | −74.63 |
| 350 | 209 | 66.2929 | 308.7092 | 1029.86 | 37.86 | 33.91 | −21.37 |
| 351 | 209 | 66.1138 | 308.7581 | 870.45 | 15.81 | 33.91 | 23.62 |
| 352 | 209 | 65.9347 | 308.8059 | 843.12 | 37.90 | 33.88 | −7.62 |
| 353 | 209 | 65.7557 | 308.8533 | 591.65 | 17.91 | 33.80 | 187.95 |
| 354 | 209 | 65.5769 | 308.8999 | 476.55 | 39.46 | 33.72 | −73.03 |
| 355 | 209 | 65.3981 | 308.9458 | 284.40 | 45.06 | 33.63 | −87.97 |
| 356 | 209 | 65.2195 | 308.9910 | 243.77 | 15.08 | 33.55 | −2.60 |
| 357 | 209 | 65.0410 | 309.0354 | 173.52 | 4.63 | 33.46 | −13.98 |
| 358 | 209 | 64.8625 | 309.0793 | 120.14 | 14.37 | 33.33 | 3.60 |
| 359 | 209 | 64.6842 | 309.1226 | 366.99 | 4.58 | 33.18 | 217.92 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 360 | 209 | 64.5060 | 309.1650 | 513.17 | 12.70 | 33.04 | −55.64 |
| 361 | 209 | 64.3279 | 309.2070 | 662.92 | 75.80 | 32.89 | −41.34 |
| 362 | 209 | 64.1500 | 309.2485 | 532.23 | 15.12 | 32.75 | −28.30 |
| 363 | 209 | 63.9721 | 309.2893 | 317.06 | 552.86 | 32.60 | 2.16 |
| 364 | 209 | 63.7943 | 309.3296 | 313.38 | 11.88 | 32.43 | −41.55 |
| 365 | 209 | 63.6167 | 309.3691 | 363.44 | 46.28 | 32.27 | −31.20 |
| 366 | 209 | 63.4392 | 309.4082 | 596.89 | 90.03 | 32.10 | −9.24 |
| 367 | 209 | 63.2618 | 309.4470 | 387.62 | 95.01 | 31.94 | −54.75 |
| 368 | 209 | 63.0845 | 309.4849 | 268.76 | 19.52 | 31.77 | 340.03 |
| 369 | 209 | 62.9074 | 309.5225 | −117.20 | 95.50 | 31.61 | −94.03 |
| 370 | 209 | 62.7303 | 309.5596 | −10.91 | 113.07 | 31.47 | −74.44 |
| 371 | 209 | 62.5534 | 309.5962 | −92.54 | 60.98 | 31.32 | −70.23 |
| 318 | 210 | 72.0977 | 307.2078 | 815.21 | 17.29 | 31.12 | −165.04 |
| 319 | 210 | 71.9157 | 307.2881 | 532.95 | 19.91 | 31.19 | −48.06 |
| 320 | 210 | 71.7338 | 307.3665 | 270.91 | 14.17 | 31.29 | 335.22 |
| 321 | 210 | 71.5520 | 307.4436 | −4.56 | 11.59 | 31.39 | 995.44 |
| 327 | 210 | 70.4623 | 307.8748 | 981.79 | 31.92 | 32.15 | 525.72 |
| 328 | 210 | 70.2809 | 307.9421 | 802.26 | 88.22 | 32.30 | 1.13 |
| 329 | 210 | 70.0996 | 308.0081 | 465.61 | 23.63 | 32.45 | −151.54 |
| 330 | 210 | 69.9184 | 308.0728 | 96.01 | 33.26 | 32.60 | 18.69 |
| 331 | 210 | 69.7373 | 308.1362 | −125.36 | 18.04 | 32.76 | −88.84 |
| 332 | 210 | 69.5562 | 308.1985 | −31.97 | 15.74 | 32.93 | −51.85 |
| 333 | 210 | 69.3752 | 308.2598 | 208.81 | 10.38 | 33.09 | −4.24 |
| 334 | 210 | 69.1943 | 308.3201 | 166.73 | 8.52 | 33.25 | −16.61 |
| 335 | 210 | 69.0135 | 308.3792 | 429.88 | 18.49 | 33.41 | 17.35 |
| 336 | 210 | 68.8327 | 308.4373 | 178.87 | 26.47 | 33.55 | −29.81 |
| 337 | 210 | 68.6521 | 308.4941 | 152.02 | 13.14 | 33.70 | −46.62 |
| 338 | 210 | 68.4715 | 308.5503 | 220.88 | 4.67 | 33.84 | −20.08 |
| 339 | 210 | 68.2910 | 308.6055 | 231.40 | 17.50 | 33.97 | 2.26 |
| 340 | 210 | 68.1107 | 308.6597 | 218.48 | 18.81 | 34.11 | −4.22 |
| 341 | 210 | 67.9304 | 308.7129 | 84.90 | 32.71 | 34.23 | −64.70 |
| 342 | 210 | 67.7502 | 308.7654 | 55.67 | 47.84 | 34.31 | −1.77 |
| 343 | 210 | 67.5700 | 308.8169 | 334.95 | 33.03 | 34.39 | −27.46 |
| 344 | 210 | 67.3900 | 308.8677 | 420.79 | 54.69 | 34.46 | 26.92 |
| 345 | 210 | 67.2101 | 308.9175 | 343.88 | 40.08 | 34.54 | 47.03 |
| 346 | 210 | 67.0303 | 308.9666 | 231.91 | 67.89 | 34.62 | −17.46 |
| 347 | 210 | 66.8505 | 309.0149 | 319.30 | 19.08 | 34.63 | −10.81 |
| 348 | 210 | 66.6709 | 309.0625 | 767.50 | 14.73 | 34.62 | −52.65 |
| 349 | 210 | 66.4914 | 309.1091 | 870.08 | 51.60 | 34.61 | −29.46 |
| 350 | 210 | 66.3120 | 309.1553 | 670.68 | 41.51 | 34.60 | 14.93 |
| 351 | 210 | 66.1326 | 309.2007 | 557.15 | 18.34 | 34.59 | 0.42 |
| 352 | 210 | 65.9534 | 309.2454 | 589.02 | 13.95 | 34.56 | −21.38 |
| 353 | 210 | 65.7743 | 309.2893 | 548.63 | 23.03 | 34.47 | 22.04 |
| 354 | 210 | 65.5953 | 309.3325 | 272.11 | 91.85 | 34.38 | −162.68 |
| 355 | 210 | 65.4164 | 309.3752 | 531.57 | 159.57 | 34.29 | −28.59 |
| 356 | 210 | 65.2376 | 309.4172 | 400.81 | 92.38 | 34.20 | −73.43 |
| 357 | 210 | 65.0590 | 309.4587 | 417.85 | 20.98 | 34.11 | −41.80 |
| 358 | 210 | 64.8804 | 309.4995 | 775.97 | 3.77 | 33.98 | 532.43 |
| 359 | 210 | 64.7019 | 309.5396 | 758.62 | 12.80 | 33.84 | 274.69 |
| 361 | 210 | 64.3454 | 309.6184 | 442.48 | 24.73 | 33.55 | 14.41 |
| 362 | 210 | 64.1673 | 309.6567 | 527.65 | 31.08 | 33.40 | 2.49 |
| 363 | 210 | 63.9892 | 309.6948 | 499.16 | 20.69 | 33.26 | −29.30 |
| 364 | 210 | 63.8114 | 309.7322 | 569.52 | 14.44 | 33.10 | −47.08 |
| 365 | 210 | 63.6336 | 309.7690 | 691.66 | 68.81 | 32.93 | −71.36 |
| 366 | 210 | 63.4559 | 309.8054 | 684.40 | 94.02 | 32.77 | −84.64 |
| 367 | 210 | 63.2784 | 309.8413 | 802.87 | 27.20 | 32.61 | 39.63 |
| 368 | 210 | 63.1010 | 309.8767 | 575.72 | 54.42 | 32.45 | −82.08 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 369 | 210 | 62.9237 | 309.9116 | 504.39 | 92.41 | 32.30 | −79.48 |
| 370 | 210 | 62.7466 | 309.9460 | 452.36 | 17.91 | 32.15 | −52.42 |
| 371 | 210 | 62.5695 | 309.9800 | 506.64 | 64.89 | 32.01 | −34.31 |
| 372 | 210 | 62.3926 | 310.0134 | 323.84 | 44.50 | 31.87 | −26.42 |
| 318 | 211 | 72.1217 | 307.8005 | 1281.55 | 31.15 | 31.91 | −310.82 |
| 319 | 211 | 71.9394 | 307.8748 | 1281.69 | 17.37 | 31.98 | −113.45 |
| 320 | 211 | 71.7573 | 307.9475 | 513.77 | 27.58 | 32.09 | −50.76 |
| 321 | 211 | 71.5752 | 308.0188 | 464.26 | 3.53 | 32.19 | −119.17 |
| 322 | 211 | 71.3932 | 308.0886 | 567.58 | 38.72 | 32.30 | 553.68 |
| 323 | 211 | 71.2112 | 308.1570 | 162.51 | 18.00 | 32.40 | −125.75 |
| 324 | 211 | 71.0293 | 308.2241 | 427.03 | 25.63 | 32.50 | −130.79 |
| 327 | 211 | 70.4841 | 308.4180 | 545.69 | 8.66 | 32.93 | −29.11 |
| 328 | 211 | 70.3025 | 308.4800 | 731.72 | 22.96 | 33.08 | −5.08 |
| 329 | 211 | 70.1210 | 308.5410 | 507.07 | 60.46 | 33.22 | −103.65 |
| 330 | 211 | 69.9396 | 308.6008 | 295.76 | 24.23 | 33.37 | 46.25 |
| 331 | 211 | 69.7582 | 308.6597 | 40.00 | 82.23 | 33.53 | −59.16 |
| 332 | 211 | 69.5770 | 308.7173 | 68.76 | 30.20 | 33.69 | −57.56 |
| 333 | 211 | 69.3958 | 308.7742 | 174.05 | 6.90 | 33.85 | −5.07 |
| 334 | 211 | 69.2147 | 308.8296 | 166.87 | 32.10 | 34.01 | −6.24 |
| 335 | 211 | 69.0337 | 308.8843 | 255.99 | 11.89 | 34.17 | 9.45 |
| 336 | 211 | 68.8527 | 308.9380 | 308.37 | 73.13 | 34.31 | −36.46 |
| 337 | 211 | 68.6719 | 308.9910 | 348.40 | 33.91 | 34.45 | −26.48 |
| 338 | 211 | 68.4911 | 309.0427 | 304.13 | 23.55 | 34.58 | −28.17 |
| 339 | 211 | 68.3105 | 309.0937 | 235.79 | 33.76 | 34.71 | −48.81 |
| 340 | 211 | 68.1299 | 309.1438 | 169.15 | 14.66 | 34.84 | −73.94 |
| 341 | 211 | 67.9495 | 309.1931 | 164.83 | 23.38 | 34.95 | −42.51 |
| 342 | 211 | 67.7691 | 309.2417 | 162.92 | 72.46 | 35.02 | −41.25 |
| 343 | 211 | 67.5888 | 309.2893 | 438.93 | 46.54 | 35.09 | −17.46 |
| 344 | 211 | 67.4086 | 309.3362 | 500.19 | 17.32 | 35.16 | 42.77 |
| 345 | 211 | 67.2285 | 309.3823 | 301.55 | 40.62 | 35.23 | 36.14 |
| 346 | 211 | 67.0486 | 309.4277 | 125.97 | 51.96 | 35.29 | −23.54 |
| 347 | 211 | 66.8687 | 309.4724 | 223.45 | 10.24 | 35.30 | −70.83 |
| 348 | 211 | 66.6889 | 309.5164 | 655.21 | 26.73 | 35.29 | −61.67 |
| 349 | 211 | 66.5092 | 309.5596 | 696.80 | 19.99 | 35.27 | −20.69 |
| 350 | 211 | 66.3296 | 309.6021 | 625.81 | 15.28 | 35.26 | 10.77 |
| 351 | 211 | 66.1502 | 309.6440 | 800.87 | 23.92 | 35.25 | −36.59 |
| 352 | 211 | 65.9708 | 309.6853 | 793.25 | 11.50 | 35.22 | −39.47 |
| 353 | 211 | 65.7915 | 309.7261 | 808.26 | 44.95 | 35.13 | −45.03 |
| 354 | 211 | 65.6124 | 309.7661 | 713.13 | 28.44 | 35.04 | −138.46 |
| 355 | 211 | 65.4334 | 309.8054 | 758.91 | 26.57 | 34.94 | −72.99 |
| 356 | 211 | 65.2544 | 309.8442 | 829.01 | 28.36 | 34.85 | −67.13 |
| 357 | 211 | 65.0756 | 309.8826 | 952.72 | 11.52 | 34.76 | −42.66 |
| 358 | 211 | 64.8969 | 309.9202 | 1006.09 | 5.91 | 34.64 | −6.90 |
| 359 | 211 | 64.7183 | 309.9575 | 636.64 | 11.43 | 34.49 | −84.97 |
| 360 | 211 | 64.5399 | 309.9941 | 272.51 | 30.63 | 34.35 | −55.73 |
| 361 | 211 | 64.3615 | 310.0300 | 157.91 | 30.94 | 34.20 | −49.29 |
| 362 | 211 | 64.1833 | 310.0657 | 303.54 | 26.24 | 34.05 | −53.20 |
| 363 | 211 | 64.0051 | 310.1008 | 703.56 | 54.64 | 33.91 | −86.22 |
| 364 | 211 | 63.8271 | 310.1353 | 964.72 | 24.82 | 33.75 | −16.09 |
| 365 | 211 | 63.6492 | 310.1694 | 943.11 | 45.42 | 33.59 | −20.82 |
| 366 | 211 | 63.4715 | 310.2031 | 1165.68 | 22.89 | 33.43 | −19.35 |
| 367 | 211 | 63.2938 | 310.2363 | 1115.72 | 21.32 | 33.27 | −39.55 |
| 368 | 211 | 63.1163 | 310.2690 | 889.72 | 31.95 | 33.11 | −146.57 |
| 369 | 211 | 62.9389 | 310.3013 | 1006.68 | 176.37 | 32.96 | −3.51 |
| 370 | 211 | 62.7616 | 310.3330 | 1064.37 | 20.34 | 32.82 | 25.17 |
| 371 | 211 | 62.5845 | 310.3645 | 854.67 | 20.55 | 32.68 | −54.01 |
| 372 | 211 | 62.4075 | 310.3955 | 652.63 | 11.62 | 32.54 | −38.85 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 373 | 211 | 62.2306 | 310.4260 | 403.18 | 12.18 | 32.40 | −65.78 |
| 318 | 212 | 72.1437 | 308.3950 | 1815.52 | 32.84 | 32.68 | −246.54 |
| 319 | 212 | 71.9613 | 308.4631 | 1508.24 | 75.13 | 32.75 | 48.59 |
| 320 | 212 | 71.7789 | 308.5300 | 670.95 | 33.51 | 32.86 | −73.12 |
| 321 | 212 | 71.5966 | 308.5955 | 734.30 | 25.35 | 32.96 | −22.54 |
| 322 | 212 | 71.4143 | 308.6597 | 592.84 | 43.71 | 33.07 | −87.59 |
| 323 | 212 | 71.2322 | 308.7227 | 688.67 | 8.99 | 33.18 | −108.85 |
| 324 | 212 | 71.0501 | 308.7842 | 925.59 | 17.95 | 33.28 | −112.92 |
| 325 | 212 | 70.8680 | 308.8447 | 561.14 | 7.63 | 33.42 | −104.56 |
| 326 | 212 | 70.6861 | 308.9041 | 177.17 | 65.06 | 33.56 | 3.65 |
| 327 | 212 | 70.5042 | 308.9622 | 495.91 | 29.93 | 33.71 | −1.52 |
| 328 | 212 | 70.3224 | 309.0193 | 694.04 | 48.85 | 33.85 | 13.76 |
| 329 | 212 | 70.1407 | 309.0752 | 384.43 | 77.22 | 34.00 | −117.02 |
| 330 | 212 | 69.9591 | 309.1304 | −51.96 | 21.89 | 34.14 | −62.30 |
| 331 | 212 | 69.7776 | 309.1843 | 206.27 | 35.99 | 34.30 | −65.09 |
| 332 | 212 | 69.5961 | 309.2373 | −19.85 | 36.76 | 34.45 | −142.86 |
| 333 | 212 | 69.4147 | 309.2893 | 324.14 | 96.94 | 34.60 | −10.52 |
| 334 | 212 | 69.2334 | 309.3403 | 108.25 | 38.60 | 34.75 | −17.21 |
| 335 | 212 | 69.0523 | 309.3906 | 100.75 | 30.32 | 34.91 | −5.86 |
| 336 | 212 | 68.8712 | 309.4399 | 207.61 | 26.66 | 35.04 | −89.84 |
| 337 | 212 | 68.6901 | 309.4883 | 391.72 | 25.06 | 35.17 | −51.55 |
| 338 | 212 | 68.5092 | 309.5361 | 388.33 | 36.63 | 35.29 | −47.68 |
| 339 | 212 | 68.3284 | 309.5828 | 414.78 | 25.63 | 35.42 | −43.64 |
| 340 | 212 | 68.1477 | 309.6289 | 388.92 | 24.80 | 35.54 | −135.37 |
| 341 | 212 | 67.9670 | 309.6741 | 235.65 | 25.72 | 35.65 | 166.34 |
| 342 | 212 | 67.7865 | 309.7187 | 271.36 | 17.55 | 35.72 | −36.84 |
| 343 | 212 | 67.6061 | 309.7625 | 445.82 | 97.88 | 35.78 | −43.88 |
| 344 | 212 | 67.4258 | 309.8054 | 411.23 | 17.13 | 35.84 | −80.97 |
| 345 | 212 | 67.2455 | 309.8479 | 378.95 | 19.41 | 35.90 | −29.70 |
| 346 | 212 | 67.0654 | 309.8894 | 425.39 | 58.48 | 35.96 | −43.46 |
| 347 | 212 | 66.8853 | 309.9304 | 332.64 | 46.40 | 35.98 | −64.08 |
| 348 | 212 | 66.7054 | 309.9707 | 676.24 | 88.10 | 35.96 | −22.50 |
| 349 | 212 | 66.5256 | 310.0105 | 766.06 | 29.16 | 35.94 | −7.94 |
| 350 | 212 | 66.3459 | 310.0496 | 1032.37 | 13.64 | 35.92 | −17.83 |
| 351 | 212 | 66.1663 | 310.0881 | 1077.75 | 15.01 | 35.90 | −39.73 |
| 352 | 212 | 65.9868 | 310.1260 | 1090.77 | 5.25 | 35.87 | −42.77 |
| 353 | 212 | 65.8074 | 310.1633 | 1106.37 | 5.54 | 35.77 | −36.54 |
| 354 | 212 | 65.6281 | 310.2000 | 1123.21 | 12.25 | 35.67 | −37.26 |
| 355 | 212 | 65.4490 | 310.2363 | 1109.78 | 32.46 | 35.58 | −47.89 |
| 356 | 212 | 65.2699 | 310.2720 | 1236.19 | 15.80 | 35.48 | 0.21 |
| 357 | 212 | 65.0910 | 310.3071 | 1286.35 | 11.63 | 35.38 | −43.26 |
| 358 | 212 | 64.9121 | 310.3416 | 1248.76 | 13.02 | 35.26 | −43.46 |
| 359 | 212 | 64.7334 | 310.3757 | 1091.49 | 12.42 | 35.12 | −17.07 |
| 360 | 212 | 64.5548 | 310.4094 | 1033.50 | 27.02 | 34.97 | 153.90 |
| 361 | 212 | 64.3764 | 310.4424 | 675.90 | 37.62 | 34.82 | 16.28 |
| 362 | 212 | 64.1980 | 310.4751 | 873.37 | 19.52 | 34.68 | −32.78 |
| 363 | 212 | 64.0198 | 310.5073 | 1129.04 | 18.57 | 34.53 | −79.23 |
| 364 | 212 | 63.8416 | 310.5391 | 1155.78 | 17.41 | 34.38 | −69.66 |
| 365 | 212 | 63.6637 | 310.5703 | 1103.30 | 28.16 | 34.22 | −73.62 |
| 366 | 212 | 63.4858 | 310.6011 | 1165.58 | 8.00 | 34.06 | −104.40 |
| 367 | 212 | 63.3080 | 310.6316 | 1410.86 | 39.51 | 33.91 | −32.27 |
| 368 | 212 | 63.1304 | 310.6616 | 1451.58 | 39.22 | 33.75 | −55.97 |
| 369 | 212 | 62.9529 | 310.6912 | 1364.94 | 28.17 | 33.61 | −30.60 |
| 370 | 212 | 62.7755 | 310.7205 | 1247.79 | 9.75 | 33.47 | −48.21 |
| 371 | 212 | 62.5983 | 310.7493 | 1084.61 | 22.84 | 33.34 | −95.16 |
| 372 | 212 | 62.4211 | 310.7776 | 859.45 | 13.72 | 33.21 | −88.28 |
| 373 | 212 | 62.2441 | 310.8057 | 657.17 | 15.81 | 33.08 | −88.31 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 374 | 212 | 62.0673 | 310.8333 | 531.78 | 3.26 | 32.95 | –82.39 |
| 375 | 212 | 61.8905 | 310.8606 | 370.28 | 6.42 | 32.85 | –81.66 |
| 376 | 212 | 61.7139 | 310.8877 | 211.33 | 13.08 | 32.77 | –82.28 |
| 377 | 212 | 62.5374 | 310.9143 | 24.07 | 11.49 | 32.68 | –83.35 |
| 318 | 213 | 72.1639 | 308.9910 | 1915.13 | 7.67 | 33.44 | –98.24 |
| 319 | 213 | 71.9812 | 309.0530 | 1674.19 | 34.05 | 33.51 | –109.11 |
| 320 | 213 | 71.7986 | 309.1138 | 1019.08 | 38.35 | 33.62 | –102.38 |
| 321 | 213 | 71.6161 | 309.1736 | 1272.83 | 20.25 | 33.72 | 0.83 |
| 322 | 213 | 71.4337 | 309.2319 | 1177.39 | 6.11 | 33.83 | –73.10 |
| 323 | 213 | 71.2513 | 309.2893 | 1283.76 | 10.13 | 33.94 | –87.95 |
| 324 | 213 | 71.0690 | 309.3455 | 1255.29 | 21.66 | 34.05 | –71.77 |
| 325 | 213 | 70.8868 | 309.4006 | 1073.91 | 5.93 | 34.18 | –56.48 |
| 326 | 213 | 70.7046 | 309.4546 | 706.61 | 15.17 | 34.32 | –83.22 |
| 327 | 213 | 70.5226 | 309.5076 | 522.63 | 92.54 | 34.46 | –105.75 |
| 328 | 213 | 70.3406 | 309.5596 | 669.58 | 53.49 | 34.60 | –88.82 |
| 329 | 213 | 70.1587 | 309.6106 | 505.76 | 42.69 | 34.74 | –10.52 |
| 330 | 213 | 69.9769 | 309.6606 | 268.68 | 29.39 | 34.88 | –60.06 |
| 331 | 213 | 69.7952 | 309.7097 | 576.35 | 26.03 | 35.04 | –47.35 |
| 332 | 213 | 69.6136 | 309.7581 | 551.95 | 118.57 | 35.19 | –66.71 |
| 333 | 213 | 69.4321 | 309.8054 | 497.58 | 13.25 | 35.34 | –25.23 |
| 334 | 213 | 69.2506 | 309.8521 | 122.39 | 14.73 | 35.48 | –54.08 |
| 335 | 213 | 69.0692 | 309.8977 | 315.93 | 59.27 | 35.63 | 9.00 |
| 336 | 213 | 68.8880 | 309.9426 | 568.65 | 49.82 | 35.76 | –68.96 |
| 337 | 213 | 68.7068 | 309.9868 | 714.36 | 9.63 | 35.89 | –48.15 |
| 338 | 213 | 68.5258 | 310.0300 | 803.09 | 12.83 | 36.00 | –49.31 |
| 339 | 213 | 68.3448 | 310.0728 | 872.75 | 20.95 | 36.12 | –37.32 |
| 340 | 213 | 68.1639 | 310.1147 | 787.32 | 40.62 | 36.24 | –117.87 |
| 341 | 213 | 67.9831 | 310.1558 | 708.52 | 14.08 | 36.34 | –82.85 |
| 342 | 213 | 67.8024 | 310.1963 | 777.09 | 12.21 | 36.40 | –65.16 |
| 343 | 213 | 67.6219 | 310.2363 | 829.80 | 9.14 | 36.45 | –68.42 |
| 344 | 213 | 67.4414 | 310.2754 | 829.59 | 32.48 | 36.51 | –69.61 |
| 345 | 213 | 67.2610 | 310.3140 | 855.51 | 11.69 | 36.56 | –51.20 |
| 346 | 213 | 67.0807 | 310.3518 | 933.80 | 26.47 | 36.61 | –60.03 |
| 347 | 213 | 66.9006 | 310.3892 | 795.73 | 22.29 | 36.62 | –71.10 |
| 348 | 213 | 66.7205 | 310.4260 | 787.51 | 10.93 | 36.60 | –52.18 |
| 349 | 213 | 66.5406 | 310.4622 | 910.94 | 16.46 | 36.57 | –19.49 |
| 350 | 213 | 66.3607 | 310.4978 | 1127.25 | 6.85 | 36.55 | –58.60 |
| 351 | 213 | 66.1810 | 310.5327 | 1273.65 | 4.15 | 36.52 | –22.70 |
| 352 | 213 | 66.0014 | 310.5671 | 1309.43 | 11.30 | 36.49 | –21.10 |
| 353 | 213 | 65.8219 | 310.6011 | 1322.37 | 8.97 | 36.39 | –20.69 |
| 354 | 213 | 65.6425 | 310.6345 | 1358.48 | 17.44 | 36.29 | –13.74 |
| 355 | 213 | 65.4632 | 310.6675 | 1381.25 | 9.40 | 36.20 | –30.60 |
| 356 | 213 | 65.2840 | 310.7000 | 1448.96 | 11.65 | 36.10 | –15.76 |
| 357 | 213 | 65.1050 | 310.7319 | 1494.90 | 60.13 | 36.00 | –27.97 |
| 358 | 213 | 64.9261 | 310.7634 | 1464.47 | 9.68 | 35.88 | –12.19 |
| 359 | 213 | 64.7472 | 310.7944 | 1399.60 | 32.18 | 35.73 | –57.72 |
| 360 | 213 | 64.5685 | 310.8252 | 1330.44 | 7.15 | 35.59 | –81.43 |
| 361 | 213 | 64.3900 | 310.8552 | 1304.86 | 16.76 | 35.45 | –97.95 |
| 362 | 213 | 64.2115 | 310.8850 | 1406.24 | 18.28 | 35.30 | –60.18 |
| 363 | 213 | 64.0331 | 310.9143 | 1430.52 | 42.84 | 35.16 | –41.23 |
| 364 | 213 | 63.8549 | 310.9431 | 1445.54 | 19.60 | 35.01 | –62.11 |
| 365 | 213 | 63.6768 | 310.9717 | 1500.35 | 10.75 | 34.85 | –69.19 |
| 366 | 213 | 63.4988 | 310.9998 | 1587.57 | 13.83 | 34.70 | –68.88 |
| 367 | 213 | 63.3210 | 311.0273 | 1707.85 | 54.54 | 34.55 | –21.34 |
| 368 | 213 | 63.1432 | 311.0547 | 1659.93 | 20.80 | 34.40 | –49.62 |
| 369 | 213 | 62.9657 | 311.0815 | 1642.73 | 16.43 | 34.25 | –49.92 |
| 370 | 213 | 62.7882 | 311.1082 | 1579.91 | 9.20 | 34.12 | –80.36 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 371 | 213 | 62.6108 | 311.1345 | 1387.03 | 13.23 | 34.00 | –88.74 |
| 372 | 213 | 62.4336 | 311.1604 | 1223.66 | 3.47 | 33.87 | –68.75 |
| 373 | 213 | 62.2565 | 311.1858 | 994.08 | 3.46 | 33.75 | –69.94 |
| 374 | 213 | 62.0796 | 311.2109 | 851.52 | 4.45 | 33.62 | –86.33 |
| 375 | 213 | 61.9027 | 311.2358 | 650.96 | 8.77 | 33.52 | –95.17 |
| 376 | 213 | 61.7260 | 311.2603 | 461.69 | 4.46 | 33.45 | –86.27 |
| 377 | 213 | 61.5495 | 311.2847 | 272.59 | 67.27 | 33.37 | –80.02 |
| 378 | 213 | 61.3730 | 311.3086 | 19.46 | 59.34 | 33.30 | –83.78 |
| 318 | 214 | 72.1822 | 309.5879 | 2090.99 | 1.82 | 34.17 | –59.13 |
| 319 | 214 | 71.9993 | 309.6440 | 1784.32 | 5.76 | 34.25 | –95.64 |
| 320 | 214 | 71.8165 | 309.6990 | 1442.11 | 19.61 | 34.36 | –132.37 |
| 321 | 214 | 71.6338 | 309.7527 | 1603.18 | 68.14 | 34.47 | –9.28 |
| 322 | 214 | 71.4512 | 309.8054 | 1492.05 | 19.31 | 34.58 | –81.94 |
| 323 | 214 | 71.2686 | 309.8572 | 1536.32 | 5.67 | 34.69 | –46.91 |
| 324 | 214 | 71.0862 | 309.9077 | 1436.45 | 16.08 | 34.80 | –75.80 |
| 325 | 214 | 70.9037 | 309.9575 | 1393.61 | 17.50 | 34.92 | –39.16 |
| 326 | 214 | 70.7214 | 310.0061 | 1218.65 | 6.07 | 35.06 | –64.72 |
| 327 | 214 | 70.5392 | 310.0540 | 1054.75 | 8.35 | 35.20 | –76.11 |
| 328 | 214 | 70.3571 | 310.1008 | 1022.66 | 37.27 | 35.34 | –68.34 |
| 329 | 214 | 70.1750 | 310.1467 | 929.05 | 8.91 | 35.48 | –80.42 |
| 330 | 214 | 69.9931 | 310.1919 | 863.06 | 10.96 | 35.62 | –51.45 |
| 331 | 214 | 69.8112 | 310.2363 | 917.22 | 17.45 | 35.76 | –54.03 |
| 332 | 214 | 69.6294 | 310.2798 | 993.44 | 12.49 | 35.91 | –55.38 |
| 333 | 214 | 69.4477 | 310.3225 | 942.70 | 8.45 | 36.05 | –54.18 |
| 334 | 214 | 69.2661 | 310.3645 | 597.49 | 20.80 | 36.19 | –80.35 |
| 335 | 214 | 69.0846 | 310.4055 | 681.17 | 11.27 | 36.33 | –21.09 |
| 336 | 214 | 68.9032 | 310.4460 | 850.79 | 24.57 | 36.46 | –95.36 |
| 337 | 214 | 68.7219 | 310.4858 | 988.26 | 11.57 | 36.57 | –43.49 |
| 338 | 214 | 68.5407 | 310.5249 | 973.23 | 20.92 | 36.69 | –42.31 |
| 339 | 214 | 68.3596 | 310.5635 | 1034.83 | 9.40 | 36.80 | –47.55 |
| 340 | 214 | 68.1786 | 310.6011 | 1086.45 | 47.36 | 36.91 | –32.32 |
| 341 | 214 | 67.9977 | 310.6382 | 1047.42 | 11.06 | 37.01 | –44.70 |
| 342 | 214 | 67.8169 | 310.6748 | 1076.59 | 25.63 | 37.06 | –58.13 |
| 343 | 214 | 67.6362 | 310.7107 | 1101.68 | 5.48 | 37.11 | –42.75 |
| 344 | 214 | 67.4556 | 310.7461 | 1152.62 | 9.32 | 37.16 | –23.14 |
| 345 | 214 | 67.2751 | 310.7808 | 1136.28 | 2.75 | 37.21 | –38.60 |
| 346 | 214 | 67.0947 | 310.8149 | 1139.46 | 14.41 | 37.25 | –35.80 |
| 347 | 214 | 66.9144 | 310.8486 | 1132.47 | 14.83 | 37.26 | –36.45 |
| 348 | 214 | 66.7342 | 310.8816 | 1074.25 | 67.54 | 37.23 | –35.15 |
| 349 | 214 | 66.5542 | 310.9143 | 1183.09 | 8.49 | 37.20 | –56.28 |
| 350 | 214 | 66.3742 | 310.9463 | 1322.34 | 48.47 | 37.17 | –34.81 |
| 351 | 214 | 66.1944 | 310.9778 | 1390.82 | 30.22 | 37.14 | –10.79 |
| 352 | 214 | 66.0146 | 311.0090 | 1436.48 | 4.25 | 37.11 | –9.15 |
| 353 | 214 | 65.8350 | 311.0396 | 1446.09 | 13.03 | 37.01 | –8.75 |
| 354 | 214 | 65.6555 | 311.0698 | 1520.40 | 23.87 | 36.91 | –19.22 |
| 355 | 214 | 65.4761 | 311.0994 | 1512.91 | 16.18 | 36.81 | –31.43 |
| 356 | 214 | 65.2968 | 311.1287 | 1569.00 | 13.19 | 36.70 | –18.91 |
| 357 | 214 | 65.1177 | 311.1575 | 1563.61 | 11.37 | 36.60 | –49.03 |
| 358 | 214 | 64.9386 | 311.1858 | 1629.44 | 14.84 | 36.48 | –22.25 |
| 359 | 214 | 64.7597 | 311.2139 | 1646.51 | 21.49 | 36.34 | –26.58 |
| 360 | 214 | 64.5809 | 311.2412 | 1660.59 | 6.15 | 36.19 | –27.71 |
| 361 | 214 | 64.4022 | 311.2686 | 1627.93 | 6.80 | 36.05 | –49.02 |
| 362 | 214 | 64.2237 | 311.2952 | 1655.93 | 73.90 | 35.90 | –36.51 |
| 363 | 214 | 64.0452 | 311.3215 | 1731.25 | 41.51 | 35.76 | –26.35 |
| 364 | 214 | 63.8669 | 311.3477 | 1787.45 | 3.90 | 35.61 | –20.95 |
| 365 | 214 | 63.6887 | 311.3733 | 1776.28 | 11.57 | 35.46 | –50.08 |
| 366 | 214 | 63.5107 | 311.3987 | 1834.98 | 19.91 | 35.31 | –31.54 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 367 | 214 | 63.3327 | 311.4236 | 1884.44 | 6.67 | 35.17 | –17.92 |
| 368 | 214 | 63.1549 | 311.4482 | 1845.19 | 14.88 | 35.02 | –18.67 |
| 369 | 214 | 62.9772 | 311.4724 | 1903.12 | 25.04 | 34.87 | –8.68 |
| 370 | 214 | 62.7997 | 311.4963 | 1838.24 | 26.26 | 34.75 | –44.77 |
| 371 | 214 | 62.6222 | 311.5200 | 1635.40 | 16.51 | 34.63 | –54.38 |
| 372 | 214 | 62.4449 | 311.5432 | 1477.84 | 9.33 | 34.52 | –57.28 |
| 373 | 214 | 62.2677 | 311.5662 | 1339.85 | 20.98 | 34.40 | –104.11 |
| 374 | 214 | 62.0907 | 311.5889 | 1111.71 | 6.03 | 34.28 | –78.98 |
| 375 | 214 | 61.9138 | 311.6113 | 958.73 | 28.89 | 34.19 | –83.84 |
| 376 | 214 | 61.7370 | 311.6333 | 790.07 | 5.50 | 34.12 | –77.68 |
| 377 | 214 | 61.5603 | 311.6553 | 672.21 | 28.46 | 34.05 | –77.90 |
| 378 | 214 | 61.3838 | 311.6768 | 390.75 | 22.62 | 33.98 | –80.77 |
| 379 | 214 | 61.2075 | 311.6980 | 316.89 | 20.24 | 33.92 | 1316.89 |
| 380 | 214 | 61.0312 | 311.7190 | 255.89 | 27.00 | 33.85 | 1255.89 |
| 318 | 215 | 72.1986 | 310.1863 | 2167.46 | 2.05 | 34.90 | –39.80 |
| 319 | 215 | 72.0155 | 310.2363 | 1934.87 | 13.27 | 34.98 | –56.46 |
| 320 | 215 | 71.8326 | 310.2852 | 1697.62 | 18.80 | 35.08 | –96.24 |
| 321 | 215 | 71.6497 | 310.3330 | 1739.97 | 3.98 | 35.19 | –53.56 |
| 322 | 215 | 71.4669 | 310.3799 | 1754.73 | 3.15 | 35.30 | –48.61 |
| 323 | 215 | 71.2841 | 310.4260 | 1767.34 | 18.29 | 35.41 | –34.22 |
| 324 | 215 | 71.1015 | 310.4709 | 1678.23 | 9.84 | 35.52 | –34.42 |
| 325 | 215 | 70.9190 | 310.5154 | 1613.59 | 5.27 | 35.65 | –47.80 |
| 326 | 215 | 70.7365 | 310.5586 | 1532.78 | 7.98 | 35.78 | –35.20 |
| 327 | 215 | 70.5541 | 310.6011 | 1419.92 | 7.73 | 35.92 | –43.22 |
| 328 | 215 | 70.3718 | 310.6428 | 1295.89 | 19.87 | 36.06 | –87.37 |
| 329 | 215 | 70.1896 | 310.6838 | 1254.58 | 40.82 | 36.20 | –83.84 |
| 330 | 215 | 70.0075 | 310.7241 | 1176.47 | 35.53 | 36.33 | –73.77 |
| 331 | 215 | 69.8255 | 310.7634 | 1166.97 | 48.54 | 36.47 | –49.87 |
| 332 | 215 | 69.6436 | 310.8022 | 1248.95 | 18.75 | 36.61 | –13.45 |
| 333 | 215 | 69.4618 | 310.8403 | 1043.67 | 6.15 | 36.75 | –82.13 |
| 334 | 215 | 69.2800 | 310.8777 | 909.07 | 33.51 | 36.89 | –93.36 |
| 335 | 215 | 69.0984 | 310.9143 | 961.37 | 13.15 | 37.03 | –59.48 |
| 336 | 215 | 68.9169 | 310.9502 | 1086.16 | 44.85 | 37.15 | –51.57 |
| 337 | 215 | 68.7354 | 310.9856 | 1145.87 | 22.64 | 37.26 | –37.95 |
| 338 | 215 | 68.5541 | 311.0205 | 1181.99 | 4.13 | 37.37 | –32.32 |
| 339 | 215 | 68.3729 | 311.0547 | 1240.67 | 16.82 | 37.47 | –17.60 |
| 340 | 215 | 68.1917 | 311.0884 | 1233.47 | 13.91 | 37.57 | –21.89 |
| 341 | 215 | 68.0107 | 311.1213 | 1277.88 | 55.32 | 37.67 | –32.72 |
| 342 | 215 | 67.8298 | 311.1538 | 1282.42 | 9.46 | 37.72 | –21.89 |
| 343 | 215 | 67.6490 | 311.1858 | 1313.62 | 19.12 | 37.76 | –11.97 |
| 344 | 215 | 67.4682 | 311.2173 | 1352.42 | 3.50 | 37.80 | –7.40 |
| 345 | 215 | 67.2876 | 311.2480 | 1341.86 | 7.55 | 37.84 | –11.67 |
| 346 | 215 | 67.1071 | 311.2786 | 1337.14 | 35.92 | 37.87 | –22.30 |
| 347 | 215 | 66.9268 | 311.3086 | 1315.65 | 4.06 | 37.88 | –28.80 |
| 348 | 215 | 66.7465 | 311.3379 | 1286.34 | 15.51 | 37.85 | –56.68 |
| 349 | 215 | 66.5663 | 311.3669 | 1377.13 | 10.96 | 37.81 | –43.56 |
| 350 | 215 | 66.3862 | 311.3955 | 1451.34 | 40.22 | 37.77 | –23.80 |
| 351 | 215 | 66.2063 | 311.4236 | 1507.79 | 28.56 | 37.74 | –18.83 |
| 352 | 215 | 66.0265 | 311.4512 | 1564.38 | 2.01 | 37.70 | –25.29 |
| 353 | 215 | 65.8468 | 311.4785 | 1585.44 | 7.42 | 37.60 | –23.18 |
| 354 | 215 | 65.6672 | 311.5051 | 1600.94 | 18.49 | 37.50 | –26.53 |
| 355 | 215 | 65.4877 | 311.5317 | 1635.69 | 75.47 | 37.40 | –37.17 |
| 356 | 215 | 65.3083 | 311.5576 | 1750.57 | 9.68 | 37.29 | –25.68 |
| 357 | 215 | 65.1290 | 311.5833 | 1799.61 | 8.33 | 37.19 | –25.74 |
| 358 | 215 | 64.9499 | 311.6086 | 1823.30 | 4.72 | 37.07 | –25.16 |
| 359 | 215 | 64.7709 | 311.6333 | 1814.45 | 12.02 | 36.93 | –34.13 |
| 360 | 215 | 64.5920 | 311.6580 | 1880.90 | 14.54 | 36.79 | –37.28 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 361 | 215 | 64.4132 | 311.6821 | 1868.44 | 15.52 | 36.64 | −57.33 |
| 362 | 215 | 64.2346 | 311.7058 | 1867.62 | 27.98 | 36.50 | −22.96 |
| 363 | 215 | 64.0561 | 311.7295 | 1930.87 | 8.60 | 36.36 | −22.57 |
| 364 | 215 | 63.8777 | 311.7524 | 1971.37 | 11.51 | 36.21 | −10.23 |
| 365 | 215 | 63.6994 | 311.7754 | 1994.24 | 11.73 | 36.07 | −21.93 |
| 366 | 215 | 63.5212 | 311.7979 | 2051.68 | 5.45 | 35.92 | −14.48 |
| 367 | 215 | 63.3432 | 311.8201 | 2043.32 | 4.74 | 35.78 | −10.19 |
| 368 | 215 | 63.1653 | 311.8420 | 2009.14 | 27.92 | 35.64 | −19.64 |
| 369 | 215 | 62.9875 | 311.8635 | 2055.74 | 43.18 | 35.50 | −23.19 |
| 370 | 215 | 62.8099 | 311.8848 | 2077.17 | 7.75 | 35.38 | −26.36 |
| 371 | 215 | 62.6324 | 311.9058 | 1842.31 | 12.13 | 35.27 | −53.73 |
| 372 | 215 | 62.4550 | 311.9265 | 1660.95 | 81.88 | 35.16 | −40.08 |
| 373 | 215 | 62.2778 | 311.9470 | 1591.95 | 27.69 | 35.05 | −39.07 |
| 374 | 215 | 62.1006 | 311.9673 | 1414.53 | 26.27 | 34.94 | −61.10 |
| 375 | 215 | 61.9237 | 311.9871 | 1278.17 | 7.82 | 34.85 | −64.73 |
| 376 | 215 | 61.7468 | 312.0068 | 1142.17 | 9.70 | 34.79 | −63.13 |
| 377 | 215 | 61.5701 | 312.0261 | 1056.92 | 32.05 | 34.73 | −70.00 |
| 378 | 215 | 61.3935 | 312.0454 | 885.24 | 20.15 | 34.67 | −102.65 |
| 379 | 215 | 61.2171 | 312.0642 | 518.22 | 27.50 | 34.61 | −91.47 |
| 380 | 215 | 61.0408 | 312.0828 | 262.69 | 63.07 | 34.55 | 213.17 |
| 381 | 215 | 60.8646 | 312.1013 | 230.08 | 37.96 | 34.52 | 1230.08 |
| 318 | 216 | 72.2130 | 310.7856 | 2250.80 | 3.47 | 35.60 | −25.81 |
| 319 | 216 | 72.0298 | 310.8293 | 2075.27 | 27.64 | 35.69 | −33.77 |
| 320 | 216 | 71.8467 | 310.8723 | 1959.68 | 13.12 | 35.79 | −47.72 |
| 321 | 216 | 71.6637 | 310.9143 | 1951.45 | 27.97 | 35.91 | −42.63 |
| 322 | 216 | 71.4807 | 310.9553 | 1922.27 | 56.48 | 36.02 | −40.88 |
| 323 | 216 | 71.2979 | 310.9956 | 1903.39 | 34.59 | 36.13 | −24.89 |
| 324 | 216 | 71.1151 | 311.0352 | 1862.94 | 6.85 | 36.24 | −28.72 |
| 325 | 216 | 70.9324 | 311.0740 | 1789.00 | 16.22 | 36.36 | −19.80 |
| 326 | 216 | 70.7498 | 311.1121 | 1708.19 | 5.45 | 36.50 | −32.75 |
| 327 | 216 | 70.5673 | 311.1492 | 1636.64 | 21.09 | 36.63 | −37.44 |
| 328 | 216 | 70.3849 | 311.1858 | 1605.48 | 6.40 | 36.77 | −31.71 |
| 329 | 216 | 70.2025 | 311.2217 | 1542.54 | 17.92 | 36.90 | −34.03 |
| 330 | 216 | 70.0203 | 311.2568 | 1455.48 | 20.80 | 37.04 | −75.79 |
| 331 | 216 | 69.8382 | 311.2915 | 1447.46 | 41.53 | 37.17 | −53.29 |
| 332 | 216 | 69.6561 | 311.3254 | 1412.27 | 29.20 | 37.31 | −55.22 |
| 333 | 216 | 69.4742 | 311.3586 | 1291.76 | 12.65 | 37.44 | −51.98 |
| 334 | 216 | 69.2923 | 311.3914 | 1199.00 | 26.58 | 37.57 | −77.04 |
| 335 | 216 | 69.1106 | 311.4236 | 1200.87 | 18.37 | 37.70 | −32.28 |
| 336 | 216 | 68.9289 | 311.4551 | 1264.71 | 4.91 | 37.82 | −18.40 |
| 337 | 216 | 68.7474 | 311.4861 | 1290.94 | 79.35 | 37.92 | −47.62 |
| 338 | 216 | 68.5659 | 311.5166 | 1356.18 | 16.27 | 38.02 | −36.91 |
| 339 | 216 | 68.3846 | 311.5466 | 1362.14 | 99.94 | 38.12 | −17.95 |
| 340 | 216 | 68.2034 | 311.5759 | 1411.90 | 8.50 | 38.21 | −11.76 |
| 341 | 216 | 68.0222 | 311.6050 | 1423.71 | 6.10 | 38.31 | −20.91 |
| 342 | 216 | 67.8412 | 311.6333 | 1439.54 | 11.76 | 38.35 | −11.11 |
| 343 | 216 | 67.6603 | 311.6614 | 1446.24 | 36.68 | 38.39 | −26.24 |
| 344 | 216 | 67.4794 | 311.6890 | 1475.69 | 5.69 | 38.42 | −19.44 |
| 345 | 216 | 67.2988 | 311.7161 | 1460.25 | 7.15 | 38.45 | −11.50 |
| 346 | 216 | 67.1181 | 311.7427 | 1477.00 | 3.79 | 38.49 | −12.70 |
| 347 | 216 | 66.9377 | 311.7688 | 1485.58 | 2.19 | 38.49 | −15.69 |
| 348 | 216 | 66.7573 | 311.7947 | 1512.61 | 2.36 | 38.45 | −13.86 |
| 349 | 216 | 66.5770 | 311.8201 | 1567.16 | 7.39 | 38.41 | −11.68 |
| 350 | 216 | 66.3969 | 311.8450 | 1634.70 | 31.88 | 38.37 | −31.17 |
| 351 | 216 | 66.2168 | 311.8696 | 1691.10 | 10.17 | 38.33 | 9.01 |
| 352 | 216 | 66.0369 | 311.8938 | 1722.32 | 32.35 | 38.29 | −20.32 |
| 353 | 216 | 65.8571 | 311.9177 | 1765.63 | 14.52 | 38.19 | −14.09 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 354 | 216 | 65.6774 | 311.9412 | 1791.86 | 3.71 | 38.09 | −25.76 |
| 355 | 216 | 65.4979 | 311.9644 | 1839.85 | 7.64 | 37.98 | −17.57 |
| 356 | 216 | 65.3184 | 311.9871 | 1897.78 | 3.16 | 37.88 | −14.76 |
| 357 | 216 | 65.1391 | 312.0095 | 1962.00 | 9.04 | 37.77 | −11.96 |
| 358 | 216 | 64.9599 | 312.0317 | 2016.71 | 7.05 | 37.66 | −15.06 |
| 359 | 216 | 64.7808 | 312.0535 | 2040.17 | 4.55 | 37.51 | −12.32 |
| 360 | 216 | 64.6018 | 312.0750 | 2071.52 | 10.57 | 37.37 | −30.52 |
| 361 | 216 | 64.4230 | 312.0959 | 2098.03 | 17.64 | 37.23 | −31.71 |
| 362 | 216 | 64.2442 | 312.1169 | 2085.33 | 5.14 | 37.09 | 8.01 |
| 363 | 216 | 64.0656 | 312.1375 | 2032.41 | 5.35 | 36.95 | −28.79 |
| 364 | 216 | 63.8872 | 312.1577 | 2078.18 | 66.17 | 36.80 | −9.21 |
| 365 | 216 | 63.7088 | 312.1777 | 2124.06 | 6.02 | 36.66 | −34.57 |
| 366 | 216 | 63.5306 | 312.1975 | 2185.62 | 2.45 | 36.52 | −23.22 |
| 367 | 216 | 63.3525 | 312.2168 | 2179.15 | 6.06 | 36.38 | −11.13 |
| 368 | 216 | 63.1745 | 312.2361 | 2205.76 | 10.97 | 36.25 | −15.24 |
| 369 | 216 | 62.9967 | 312.2549 | 2258.94 | 19.69 | 36.11 | −29.71 |
| 370 | 216 | 62.8190 | 312.2737 | 2216.49 | 7.01 | 36.00 | −14.38 |
| 371 | 216 | 62.6414 | 312.2920 | 2010.84 | 38.83 | 35.89 | −79.25 |
| 372 | 216 | 62.4639 | 312.3101 | 1923.15 | 12.41 | 35.79 | −30.24 |
| 373 | 216 | 62.2866 | 312.3281 | 1773.78 | 24.91 | 35.68 | −49.21 |
| 374 | 216 | 62.1095 | 312.3457 | 1686.21 | 12.74 | 35.58 | −28.31 |
| 375 | 216 | 61.9324 | 312.3630 | 1656.53 | 39.05 | 35.49 | −24.31 |
| 376 | 216 | 61.7555 | 312.3804 | 1495.47 | 16.31 | 35.44 | −32.92 |
| 377 | 216 | 61.5787 | 312.3972 | 1487.86 | 5.29 | 35.39 | −57.82 |
| 378 | 216 | 61.4021 | 312.4141 | 1298.01 | 28.30 | 35.33 | −84.55 |
| 379 | 216 | 61.2256 | 312.4307 | 968.42 | 13.14 | 35.28 | −97.60 |
| 380 | 216 | 61.0492 | 312.4470 | 519.14 | 73.17 | 35.23 | −119.76 |
| 381 | 216 | 60.8729 | 312.4631 | 15.23 | 22.92 | 35.21 | 47.94 |
| 318 | 217 | 72.2256 | 311.3860 | 2346.38 | 2.68 | 36.29 | 1.73 |
| 319 | 217 | 72.0422 | 311.4236 | 2210.48 | 38.05 | 36.38 | −31.17 |
| 320 | 217 | 71.8590 | 311.4602 | 2169.76 | 38.56 | 36.48 | −24.91 |
| 321 | 217 | 71.6758 | 311.4963 | 2142.69 | 10.17 | 36.60 | −14.01 |
| 322 | 217 | 71.4927 | 311.5317 | 2110.44 | 4.41 | 36.71 | −15.27 |
| 323 | 217 | 71.3097 | 311.5662 | 2039.47 | 5.34 | 36.82 | −23.86 |
| 324 | 217 | 71.1268 | 311.6001 | 1978.59 | 15.17 | 36.94 | −17.50 |
| 325 | 217 | 70.9440 | 311.6333 | 1894.36 | 18.90 | 37.06 | −29.91 |
| 326 | 217 | 70.7613 | 311.6660 | 1879.52 | 13.45 | 37.19 | −17.87 |
| 327 | 217 | 70.5787 | 311.6980 | 1816.96 | 29.74 | 37.32 | −34.22 |
| 328 | 217 | 70.3961 | 311.7295 | 1805.49 | 12.10 | 37.46 | −14.66 |
| 329 | 217 | 70.2137 | 311.7603 | 1741.84 | 16.93 | 37.59 | −17.51 |
| 330 | 217 | 70.0314 | 311.7903 | 1688.01 | 6.08 | 37.73 | −29.55 |
| 331 | 217 | 69.8491 | 311.8201 | 1657.76 | 7.80 | 37.86 | −27.53 |
| 332 | 217 | 69.6670 | 311.8491 | 1627.79 | 12.09 | 37.99 | −17.48 |
| 333 | 217 | 69.4849 | 311.8777 | 1547.03 | 34.62 | 38.12 | −52.69 |
| 334 | 217 | 69.3030 | 311.9058 | 1417.88 | 22.57 | 38.24 | −42.10 |
| 335 | 217 | 69.1211 | 311.9333 | 1425.06 | 32.61 | 38.37 | −33.03 |
| 336 | 217 | 68.9394 | 311.9604 | 1415.61 | 4.51 | 38.49 | −24.16 |
| 337 | 217 | 68.7577 | 311.9871 | 1432.70 | 8.32 | 38.58 | −19.23 |
| 338 | 217 | 68.5762 | 312.0132 | 1535.07 | 41.78 | 38.67 | −25.14 |
| 339 | 217 | 68.3947 | 312.0391 | 1545.94 | 6.82 | 38.76 | −14.28 |
| 340 | 217 | 68.2134 | 312.0642 | 1541.71 | 24.56 | 38.85 | −12.44 |
| 341 | 217 | 68.0322 | 312.0891 | 1526.98 | 4.97 | 38.94 | −15.63 |
| 342 | 217 | 67.8511 | 312.1135 | 1570.23 | 8.77 | 38.98 | −10.96 |
| 343 | 217 | 67.6701 | 312.1375 | 1583.46 | 9.41 | 39.01 | −12.64 |
| 344 | 217 | 67.4892 | 312.1611 | 1580.40 | 25.70 | 39.03 | −15.14 |
| 345 | 217 | 67.3084 | 312.1843 | 1574.34 | 5.11 | 39.06 | −20.33 |
| 346 | 217 | 67.1277 | 312.2073 | 1593.57 | 1.47 | 39.09 | −10.13 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 347 | 217 | 66.9471 | 312.2297 | 1612.77 | 58.60 | 39.09 | −14.82 |
| 348 | 217 | 66.7667 | 312.2517 | 1689.23 | 8.09 | 39.05 | −8.30 |
| 349 | 217 | 66.5863 | 312.2737 | 1739.91 | 2.56 | 39.00 | −12.13 |
| 350 | 217 | 66.4061 | 312.2949 | 1797.48 | 3.92 | 38.95 | −18.52 |
| 351 | 217 | 66.2260 | 312.3162 | 1829.96 | 13.54 | 38.91 | −17.12 |
| 352 | 217 | 66.0460 | 312.3369 | 1870.10 | 6.42 | 38.86 | −3.97 |
| 353 | 217 | 65.8661 | 312.3574 | 1900.31 | 4.70 | 38.77 | −18.07 |
| 354 | 217 | 65.6864 | 312.3774 | 1947.38 | 4.01 | 38.66 | −12.74 |
| 355 | 217 | 65.5067 | 312.3972 | 1987.29 | 3.09 | 38.55 | −14.03 |
| 356 | 217 | 65.3272 | 312.4167 | 2032.94 | 56.61 | 38.44 | −8.29 |
| 357 | 217 | 65.1478 | 312.4360 | 2093.53 | 8.13 | 38.33 | −19.96 |
| 358 | 217 | 64.9685 | 312.4551 | 2154.61 | 2.22 | 38.22 | −8.38 |
| 359 | 217 | 64.7893 | 312.4739 | 2191.36 | 14.81 | 38.08 | −10.71 |
| 360 | 217 | 64.6103 | 312.4922 | 2230.72 | 36.95 | 37.94 | −8.02 |
| 361 | 217 | 64.4314 | 312.5103 | 2230.13 | 4.69 | 37.80 | −5.87 |
| 362 | 217 | 64.2526 | 312.5283 | 2206.75 | 3.01 | 37.66 | −6.68 |
| 363 | 217 | 64.0739 | 312.5459 | 2196.31 | 6.35 | 37.52 | −9.85 |
| 364 | 217 | 63.8954 | 312.5632 | 2212.35 | 2.96 | 37.38 | −13.29 |
| 365 | 217 | 63.7170 | 312.5803 | 2274.33 | 2.71 | 37.25 | −17.56 |
| 366 | 217 | 63.5387 | 312.5972 | 2320.76 | 15.77 | 37.11 | −10.73 |
| 367 | 217 | 63.3605 | 312.6140 | 2321.18 | 10.29 | 36.98 | −12.40 |
| 368 | 217 | 63.1825 | 312.6304 | 2381.15 | 2.05 | 36.84 | −20.30 |
| 369 | 217 | 63.0046 | 312.6465 | 2468.03 | 2.39 | 36.71 | −0.46 |
| 370 | 217 | 62.8268 | 312.6626 | 2389.57 | 13.20 | 36.61 | −15.83 |
| 371 | 217 | 62.6492 | 312.6785 | 2192.50 | 13.18 | 36.51 | −37.12 |
| 372 | 217 | 62.4717 | 312.6938 | 2031.97 | 9.41 | 36.41 | −38.60 |
| 373 | 217 | 62.2943 | 312.7092 | 1955.75 | 12.99 | 36.31 | −52.76 |
| 374 | 217 | 62.1171 | 312.7244 | 1895.29 | 169.12 | 36.22 | −36.58 |
| 375 | 217 | 61.9400 | 312.7393 | 1796.54 | 12.64 | 36.14 | −18.91 |
| 376 | 217 | 61.7630 | 312.7542 | 1704.23 | 25.47 | 36.09 | −43.12 |
| 377 | 217 | 61.5862 | 312.7688 | 1637.16 | 21.16 | 36.04 | −65.88 |
| 378 | 217 | 61.4095 | 312.7832 | 1447.00 | 13.18 | 36.00 | −105.25 |
| 379 | 217 | 61.2329 | 312.7974 | 1122.91 | 29.82 | 35.95 | −136.35 |
| 380 | 217 | 61.0565 | 312.8113 | 585.56 | 97.44 | 35.91 | −162.05 |
| 381 | 217 | 60.8802 | 312.8252 | 105.57 | 47.46 | 35.90 | −132.76 |
| 318 | 218 | 72.2362 | 311.9871 | 2373.92 | 0.80 | 36.97 | −15.60 |
| 319 | 218 | 72.0527 | 312.0183 | 2335.12 | 7.50 | 37.06 | −12.82 |
| 320 | 218 | 71.8694 | 312.0491 | 2276.62 | 15.56 | 37.17 | −15.32 |
| 321 | 218 | 71.6861 | 312.0791 | 2255.99 | 8.53 | 37.28 | −16.45 |
| 322 | 218 | 71.5029 | 312.1086 | 2217.04 | 10.15 | 37.39 | −11.68 |
| 323 | 218 | 71.3198 | 312.1375 | 2140.76 | 20.73 | 37.51 | −17.91 |
| 324 | 218 | 71.1368 | 312.1658 | 2103.30 | 6.73 | 37.62 | −13.73 |
| 325 | 218 | 70.9539 | 312.1936 | 2051.47 | 4.56 | 37.74 | −14.19 |
| 326 | 218 | 70.7711 | 312.2207 | 2020.04 | 41.35 | 37.87 | −17.97 |
| 327 | 218 | 70.5883 | 312.2473 | 1932.06 | 52.97 | 38.01 | −27.91 |
| 328 | 218 | 70.4057 | 312.2737 | 1906.85 | 15.58 | 38.14 | −38.14 |
| 329 | 218 | 70.2232 | 312.2993 | 1870.41 | 7.17 | 38.27 | −20.41 |
| 330 | 218 | 70.0407 | 312.3245 | 1838.84 | 34.37 | 38.40 | −12.87 |
| 331 | 218 | 69.8584 | 312.3491 | 1817.61 | 2.43 | 38.52 | −14.52 |
| 332 | 218 | 69.6762 | 312.3735 | 1758.35 | 18.71 | 38.65 | −14.51 |
| 333 | 218 | 69.4940 | 312.3972 | 1691.48 | 28.04 | 38.77 | −21.54 |
| 334 | 218 | 69.3120 | 312.4207 | 1608.28 | 31.59 | 38.90 | −41.63 |
| 335 | 218 | 69.1301 | 312.4438 | 1600.70 | 15.26 | 39.02 | −24.11 |
| 336 | 218 | 68.9482 | 312.4663 | 1609.34 | 4.97 | 39.13 | −8.41 |
| 337 | 218 | 68.7665 | 312.4885 | 1563.61 | 9.53 | 39.22 | −23.53 |
| 338 | 218 | 68.5849 | 312.5103 | 1681.86 | 13.12 | 39.30 | −9.13 |
| 339 | 218 | 68.4034 | 312.5317 | 1657.94 | 22.62 | 39.39 | −15.77 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 340 | 218 | 68.2219 | 312.5527 | 1673.23 | 2.58 | 39.47 | −12.68 |
| 341 | 218 | 68.0406 | 312.5735 | 1670.55 | 6.55 | 39.55 | −13.46 |
| 342 | 218 | 67.8595 | 312.5940 | 1679.49 | 8.50 | 39.59 | −18.88 |
| 343 | 218 | 67.6784 | 312.6140 | 1712.23 | 16.44 | 39.61 | −9.93 |
| 344 | 218 | 67.4974 | 312.6335 | 1722.39 | 4.99 | 39.63 | −18.76 |
| 345 | 218 | 67.3165 | 312.6531 | 1734.56 | 5.47 | 39.65 | −15.88 |
| 346 | 218 | 67.1358 | 312.6721 | 1750.00 | 2.13 | 39.67 | −15.52 |
| 347 | 218 | 66.9551 | 312.6909 | 1751.65 | 1.81 | 39.68 | −12.45 |
| 348 | 218 | 66.7746 | 312.7092 | 1790.69 | 8.68 | 39.63 | −17.33 |
| 349 | 218 | 66.5942 | 312.7275 | 1858.56 | 2.03 | 39.58 | −10.62 |
| 350 | 218 | 66.4139 | 312.7454 | 1912.05 | 3.30 | 39.53 | −7.43 |
| 351 | 218 | 66.2337 | 312.7629 | 1946.70 | 12.05 | 39.47 | −10.95 |
| 352 | 218 | 66.0537 | 312.7803 | 1982.01 | 2.68 | 39.42 | −14.86 |
| 353 | 218 | 65.8737 | 312.7974 | 2020.78 | 4.39 | 39.33 | −7.86 |
| 354 | 218 | 65.6939 | 312.8140 | 2061.88 | 5.92 | 39.22 | −20.43 |
| 355 | 218 | 65.5142 | 312.8306 | 2116.21 | 5.04 | 39.11 | −8.09 |
| 356 | 218 | 65.3346 | 312.8469 | 2180.76 | 10.92 | 39.00 | −1.68 |
| 357 | 218 | 65.1551 | 312.8630 | 2205.26 | 2.40 | 38.90 | −14.37 |
| 358 | 218 | 64.9758 | 312.8787 | 2263.08 | 41.32 | 38.78 | −6.70 |
| 359 | 218 | 64.7966 | 312.8943 | 2293.21 | 22.85 | 38.64 | −5.09 |
| 360 | 218 | 64.6175 | 312.9097 | 2323.53 | 6.87 | 38.51 | −5.55 |
| 361 | 218 | 64.4385 | 312.9248 | 2329.95 | 1.45 | 38.37 | −4.70 |
| 362 | 218 | 64.2597 | 312.9397 | 2313.54 | 6.73 | 38.23 | −7.99 |
| 363 | 218 | 64.0809 | 312.9546 | 2322.76 | 8.59 | 38.09 | −9.02 |
| 364 | 218 | 63.9023 | 312.9690 | 2350.78 | 1.47 | 37.96 | −8.61 |
| 365 | 218 | 63.7239 | 312.9832 | 2385.65 | 1.02 | 37.83 | −8.12 |
| 366 | 218 | 63.5455 | 312.9973 | 2415.63 | 16.28 | 37.70 | −9.58 |
| 367 | 218 | 63.3673 | 313.0112 | 2442.97 | 9.92 | 37.57 | −20.00 |
| 368 | 218 | 63.1893 | 313.0249 | 2473.66 | 4.18 | 37.44 | −29.18 |
| 369 | 218 | 63.0113 | 313.0386 | 2529.90 | 16.26 | 37.31 | −12.93 |
| 370 | 218 | 62.8335 | 313.0518 | 2469.80 | 32.32 | 37.22 | −37.14 |
| 371 | 218 | 62.6558 | 313.0649 | 2276.45 | 12.30 | 37.12 | −33.01 |
| 372 | 218 | 62.4782 | 313.0779 | 2182.29 | 6.19 | 37.03 | −12.76 |
| 373 | 218 | 62.3008 | 313.0908 | 2093.38 | 43.59 | 36.94 | −40.50 |
| 374 | 218 | 62.1235 | 313.1033 | 2067.89 | 7.41 | 36.85 | −28.52 |
| 375 | 218 | 61.9464 | 313.1157 | 2020.94 | 12.79 | 36.77 | −26.37 |
| 376 | 218 | 61.7694 | 313.1282 | 1972.76 | 14.42 | 36.73 | −42.17 |
| 377 | 218 | 61.5925 | 313.1404 | 1616.34 | 30.78 | 36.70 | −83.92 |
| 378 | 218 | 61.4157 | 313.1523 | 1375.04 | 12.96 | 36.66 | −96.15 |
| 379 | 218 | 61.2391 | 313.1641 | 1097.02 | 29.79 | 36.62 | −126.44 |
| 380 | 218 | 61.0627 | 313.1758 | 624.53 | 33.25 | 36.58 | −144.84 |
| 381 | 218 | 60.8863 | 313.1873 | −17.15 | 34.90 | 36.57 | −158.16 |
| 318 | 219 | 72.2449 | 312.5889 | 2464.68 | 0.34 | 37.62 | −7.66 |
| 319 | 219 | 72.0613 | 312.6140 | 2429.56 | 23.23 | 37.72 | −12.30 |
| 320 | 219 | 71.8779 | 312.6384 | 2392.28 | 4.39 | 37.83 | −10.60 |
| 321 | 219 | 71.6945 | 312.6626 | 2352.07 | 4.28 | 37.94 | −13.60 |
| 322 | 219 | 71.5112 | 312.6860 | 2297.97 | 8.41 | 38.06 | −21.77 |
| 323 | 219 | 71.3280 | 312.7092 | 2235.74 | 18.85 | 38.18 | −15.82 |
| 324 | 219 | 71.1449 | 312.7319 | 2199.30 | 35.71 | 38.29 | −3.72 |
| 325 | 219 | 70.9619 | 312.7542 | 2172.46 | 8.70 | 38.41 | −8.45 |
| 326 | 219 | 70.7791 | 312.7759 | 2119.35 | 30.35 | 38.54 | −9.50 |
| 327 | 219 | 70.5962 | 312.7974 | 2087.29 | 5.48 | 38.67 | −9.67 |
| 328 | 219 | 70.4135 | 312.8181 | 2049.42 | 9.36 | 38.80 | 16.83 |
| 329 | 219 | 70.2309 | 312.8389 | 2011.85 | 4.28 | 38.93 | −6.76 |
| 330 | 219 | 70.0484 | 312.8589 | 1963.31 | 31.24 | 39.06 | −10.38 |
| 331 | 219 | 69.8660 | 312.8787 | 1926.15 | 6.79 | 39.18 | −16.64 |
| 332 | 219 | 69.6837 | 312.8982 | 1859.66 | 13.73 | 39.30 | −30.88 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 333 | 219 | 69.5015 | 312.9172 | 1815.30 | 10.38 | 39.42 | −20.53 |
| 334 | 219 | 69.3194 | 312.9360 | 1740.22 | 72.64 | 39.54 | −12.05 |
| 335 | 219 | 69.1374 | 312.9546 | 1818.31 | 6.86 | 39.66 | −13.63 |
| 336 | 219 | 68.9555 | 312.9727 | 1733.97 | 5.53 | 39.77 | −19.29 |
| 337 | 219 | 68.7737 | 312.9902 | 1737.44 | 4.67 | 39.85 | −11.25 |
| 338 | 219 | 68.5920 | 313.0078 | 1781.18 | 6.47 | 39.93 | 22.84 |
| 339 | 219 | 68.4104 | 313.0249 | 1774.28 | 6.03 | 40.01 | −10.50 |
| 340 | 219 | 68.2289 | 313.0417 | 1749.82 | 6.90 | 40.09 | −11.95 |
| 341 | 219 | 68.0475 | 313.0583 | 1785.77 | 5.54 | 40.16 | −14.38 |
| 342 | 219 | 67.8663 | 313.0747 | 1796.65 | 4.43 | 40.20 | −13.23 |
| 343 | 219 | 67.6852 | 313.0908 | 1818.08 | 2.94 | 40.21 | −9.31 |
| 344 | 219 | 67.5041 | 313.1064 | 1842.48 | 13.80 | 40.23 | −13.64 |
| 345 | 219 | 67.3232 | 313.1221 | 1863.46 | 4.38 | 40.24 | −14.08 |
| 346 | 219 | 67.1424 | 313.1372 | 1882.71 | 5.87 | 40.25 | −10.40 |
| 347 | 219 | 66.9617 | 313.1523 | 1890.89 | 2.21 | 40.25 | −8.90 |
| 348 | 219 | 66.7811 | 313.1670 | 1916.04 | 2.33 | 40.20 | −10.10 |
| 349 | 219 | 66.6006 | 313.1816 | 1961.98 | 1.57 | 40.14 | −7.54 |
| 350 | 219 | 66.4203 | 313.1958 | 2011.54 | 3.06 | 40.09 | −5.98 |
| 351 | 219 | 66.2401 | 313.2100 | 2020.98 | 21.35 | 40.03 | −35.75 |
| 352 | 219 | 66.0600 | 313.2239 | 2075.10 | 15.22 | 39.98 | −11.15 |
| 353 | 219 | 65.8799 | 313.2375 | 2127.23 | 6.60 | 39.89 | −9.13 |
| 354 | 219 | 65.7001 | 313.2510 | 2176.47 | 5.81 | 39.78 | −11.01 |
| 355 | 219 | 65.5203 | 313.2642 | 2214.04 | 8.78 | 39.67 | −9.95 |
| 356 | 219 | 65.3407 | 313.2771 | 2268.58 | 2.11 | 39.56 | −3.28 |
| 357 | 219 | 65.1612 | 313.2900 | 2303.80 | 6.62 | 39.45 | −4.43 |
| 358 | 219 | 64.9818 | 313.3027 | 2345.14 | 5.67 | 39.33 | −3.05 |
| 359 | 219 | 64.8025 | 313.3152 | 2369.71 | 5.28 | 39.20 | −4.55 |
| 360 | 219 | 64.6234 | 313.3274 | 2393.75 | 1.02 | 39.06 | −5.43 |
| 361 | 219 | 64.4444 | 313.3396 | 2406.39 | 17.62 | 38.92 | −4.04 |
| 362 | 219 | 64.2655 | 313.3516 | 2415.81 | 4.39 | 38.79 | −5.76 |
| 363 | 219 | 64.0867 | 313.3633 | 2418.27 | 2.17 | 38.65 | −8.17 |
| 364 | 219 | 63.9081 | 313.3750 | 2444.63 | 2.71 | 38.52 | −4.19 |
| 365 | 219 | 63.7295 | 313.3862 | 2466.20 | 7.51 | 38.40 | −3.54 |
| 366 | 219 | 63.5511 | 313.3977 | 2505.55 | 1.59 | 38.27 | −10.92 |
| 367 | 219 | 63.3729 | 313.4087 | 2557.58 | 6.37 | 38.15 | −14.15 |
| 368 | 219 | 63.1948 | 313.4197 | 2620.78 | 9.26 | 38.02 | −6.49 |
| 369 | 219 | 63.0168 | 313.4304 | 2625.07 | 1.92 | 37.90 | −7.28 |
| 370 | 219 | 62.8389 | 313.4412 | 2520.96 | 17.07 | 37.81 | −37.04 |
| 371 | 219 | 62.6612 | 313.4517 | 2363.57 | 21.50 | 37.72 | −26.11 |
| 372 | 219 | 62.4836 | 313.4622 | 2296.48 | 4.06 | 37.64 | −4.26 |
| 373 | 219 | 62.3061 | 313.4724 | 2265.52 | 2.32 | 37.55 | −10.30 |
| 374 | 219 | 62.1288 | 313.4824 | 2232.58 | 8.38 | 37.47 | −8.20 |
| 375 | 219 | 61.9516 | 313.4924 | 2175.43 | 10.72 | 37.40 | −32.53 |
| 376 | 219 | 61.7746 | 313.5022 | 2016.56 | 46.18 | 37.37 | −76.82 |
| 377 | 219 | 61.5976 | 313.5120 | 1613.79 | 21.83 | 37.34 | −163.08 |
| 378 | 219 | 61.4209 | 313.5215 | 1284.85 | 34.76 | 37.31 | −98.91 |
| 379 | 219 | 61.2442 | 313.5310 | 956.92 | 34.44 | 37.28 | −77.74 |
| 380 | 219 | 61.0677 | 313.5405 | 446.52 | 15.14 | 37.25 | −131.95 |
| 318 | 220 | 72.2516 | 313.1912 | 2544.85 | 0.36 | 38.26 | −7.58 |
| 319 | 220 | 72.0680 | 313.2100 | 2519.86 | 20.26 | 38.36 | −9.79 |
| 320 | 220 | 71.8845 | 313.2285 | 2490.37 | 16.40 | 38.48 | −6.09 |
| 321 | 220 | 71.7010 | 313.2466 | 2445.32 | 8.50 | 38.59 | −10.31 |
| 322 | 220 | 71.5177 | 313.2642 | 2396.74 | 8.67 | 38.71 | −11.80 |
| 323 | 220 | 71.3345 | 313.2815 | 2344.83 | 8.72 | 38.83 | −13.34 |
| 324 | 220 | 71.1513 | 313.2986 | 2292.48 | 5.28 | 38.95 | −11.07 |
| 325 | 220 | 70.9682 | 313.3152 | 2253.22 | 26.91 | 39.07 | −11.74 |
| 326 | 220 | 70.7853 | 313.3315 | 2209.57 | 9.53 | 39.20 | −7.59 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 327 | 220 | 70.6024 | 313.3477 | 2181.95 | 12.77 | 39.32 | −9.06 |
| 328 | 220 | 70.4196 | 313.3633 | 2153.73 | 3.92 | 39.45 | −8.49 |
| 329 | 220 | 70.2370 | 313.3787 | 2101.31 | 5.81 | 39.58 | −14.88 |
| 330 | 220 | 70.0544 | 313.3938 | 2071.53 | 5.44 | 39.71 | −10.34 |
| 331 | 220 | 69.8719 | 313.4087 | 2042.61 | 10.23 | 39.83 | −7.96 |
| 332 | 220 | 69.6895 | 313.4233 | 1987.32 | 16.40 | 39.94 | 3.78 |
| 333 | 220 | 69.5073 | 313.4377 | 1944.26 | 13.78 | 40.06 | −22.17 |
| 334 | 220 | 69.3251 | 313.4517 | 1888.85 | 7.43 | 40.17 | −14.22 |
| 335 | 220 | 69.1431 | 313.4656 | 1847.77 | 23.71 | 40.29 | −15.73 |
| 336 | 220 | 68.9611 | 313.4790 | 1835.58 | 3.31 | 40.39 | −18.88 |
| 337 | 220 | 68.7793 | 313.4924 | 1856.95 | 25.32 | 40.47 | −12.43 |
| 338 | 220 | 68.5975 | 313.5056 | 1831.23 | 11.21 | 40.54 | −32.83 |
| 339 | 220 | 68.4159 | 313.5183 | 1878.93 | 3.55 | 40.61 | 0.72 |
| 340 | 220 | 68.2343 | 313.5310 | 1866.20 | 26.65 | 40.68 | −7.30 |
| 341 | 220 | 68.0529 | 313.5435 | 1903.50 | 3.41 | 40.76 | −13.20 |
| 342 | 220 | 67.8716 | 313.5557 | 1917.75 | 6.92 | 40.78 | −7.27 |
| 343 | 220 | 67.6904 | 313.5679 | 1932.77 | 5.05 | 40.79 | −9.52 |
| 344 | 220 | 67.5094 | 313.5796 | 1957.10 | 2.24 | 40.80 | −6.60 |
| 345 | 220 | 67.3284 | 313.5913 | 1971.43 | 2.84 | 40.81 | −8.81 |
| 346 | 220 | 67.1475 | 313.6028 | 1986.35 | 2.69 | 40.82 | −7.55 |
| 347 | 220 | 66.9668 | 313.6140 | 2006.26 | 4.24 | 40.82 | −7.83 |
| 348 | 220 | 66.7862 | 313.6250 | 2028.16 | 1.60 | 40.76 | −14.29 |
| 349 | 220 | 66.6057 | 313.6360 | 2060.79 | 6.34 | 40.70 | −6.11 |
| 350 | 220 | 66.4253 | 313.6467 | 2103.14 | 2.17 | 40.64 | −7.68 |
| 351 | 220 | 66.2450 | 313.6572 | 2136.86 | 3.10 | 40.59 | −6.75 |
| 352 | 220 | 66.0648 | 313.6677 | 2175.90 | 5.58 | 40.53 | −10.37 |
| 353 | 220 | 65.8848 | 313.6780 | 2216.30 | 2.18 | 40.43 | −9.71 |
| 354 | 220 | 65.7049 | 313.6880 | 2261.88 | 2.25 | 40.32 | −6.18 |
| 355 | 220 | 65.5251 | 313.6980 | 2302.60 | 4.20 | 40.21 | −8.42 |
| 356 | 220 | 65.3454 | 313.7078 | 2346.85 | 3.24 | 40.10 | −8.67 |
| 357 | 220 | 65.1658 | 313.7173 | 2382.55 | 3.26 | 39.99 | −1.55 |
| 358 | 220 | 64.9864 | 313.7268 | 2398.23 | 1.68 | 39.88 | −6.08 |
| 359 | 220 | 64.8071 | 313.7361 | 2441.42 | 1.77 | 39.74 | −7.34 |
| 360 | 220 | 64.6279 | 313.7454 | 2471.78 | 8.79 | 39.61 | −4.05 |
| 361 | 220 | 64.4489 | 313.7544 | 2479.32 | 16.66 | 39.48 | −5.82 |
| 362 | 220 | 64.2700 | 313.7634 | 2495.89 | 2.52 | 39.34 | −4.62 |
| 363 | 220 | 64.0912 | 313.7722 | 2505.85 | 1.66 | 39.21 | −5.46 |
| 364 | 220 | 63.9125 | 313.7810 | 2516.15 | 8.39 | 39.08 | −3.99 |
| 365 | 220 | 63.7339 | 313.7896 | 2542.55 | 6.07 | 38.96 | −11.14 |
| 366 | 220 | 63.5555 | 313.7981 | 2567.58 | 4.47 | 38.84 | −5.64 |
| 367 | 220 | 63.3772 | 313.8064 | 2615.77 | 1.94 | 38.72 | −6.04 |
| 368 | 220 | 63.1991 | 313.8147 | 2681.43 | 2.57 | 38.60 | −3.61 |
| 369 | 220 | 63.0210 | 313.8228 | 2684.71 | 2.94 | 38.48 | −4.49 |
| 370 | 220 | 62.8432 | 313.8308 | 2625.07 | 19.92 | 38.40 | 1.95 |
| 371 | 220 | 62.6654 | 313.8386 | 2502.10 | 33.54 | 38.32 | −24.44 |
| 372 | 220 | 62.4878 | 313.8464 | 2429.47 | 8.41 | 38.25 | −9.96 |
| 373 | 220 | 62.3103 | 313.8540 | 2400.48 | 2.31 | 38.17 | −10.40 |
| 374 | 220 | 62.1329 | 313.8618 | 2383.61 | 5.50 | 38.09 | −16.34 |
| 375 | 220 | 61.9557 | 313.8691 | 2323.03 | 8.50 | 38.03 | −25.14 |
| 376 | 220 | 61.7786 | 313.8765 | 2138.17 | 9.61 | 38.00 | −60.48 |
| 377 | 220 | 61.6017 | 313.8838 | 1571.25 | 90.41 | 37.98 | −90.16 |
| 378 | 220 | 61.4249 | 313.8911 | 1262.75 | 121.60 | 37.96 | −124.70 |
| 379 | 220 | 61.2482 | 313.8982 | 812.95 | 12.04 | 37.93 | −95.09 |
| 380 | 220 | 61.0717 | 313.9053 | 135.06 | 12.99 | 37.91 | −443.25 |
| 318 | 221 | 72.2565 | 313.7939 | 2625.24 | 0.27 | 38.89 | −8.81 |
| 319 | 221 | 72.0728 | 313.8064 | 2600.66 | 5.51 | 39.00 | −6.54 |
| 320 | 221 | 71.8892 | 313.8186 | 2566.20 | 4.43 | 39.11 | −5.62 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 321 | 221 | 71.7057 | 313.8308 | 2528.66 | 11.80 | 39.23 | −5.36 |
| 322 | 221 | 71.5223 | 313.8425 | 2479.85 | 4.26 | 39.35 | −9.85 |
| 323 | 221 | 71.3390 | 313.8540 | 2437.55 | 1.96 | 39.47 | −6.11 |
| 324 | 221 | 71.1558 | 313.8655 | 2390.23 | 11.09 | 39.59 | −12.29 |
| 325 | 221 | 70.9727 | 313.8765 | 2358.35 | 3.41 | 39.71 | −7.60 |
| 326 | 221 | 70.7897 | 313.8875 | 2303.23 | 4.81 | 39.84 | −20.22 |
| 327 | 221 | 70.6068 | 313.8982 | 2288.55 | 6.54 | 39.97 | −13.82 |
| 328 | 221 | 70.4240 | 313.9087 | 2260.39 | 16.40 | 40.10 | −5.98 |
| 329 | 221 | 70.2413 | 313.9189 | 2199.64 | 9.17 | 40.22 | −14.02 |
| 330 | 221 | 70.0586 | 313.9290 | 2133.88 | 5.11 | 40.35 | −18.33 |
| 331 | 221 | 69.8761 | 313.9390 | 2133.47 | 28.45 | 40.47 | −8.67 |
| 332 | 221 | 69.6937 | 313.9487 | 2074.76 | 4.16 | 40.58 | −11.04 |
| 333 | 221 | 69.5114 | 313.9583 | 2049.57 | 20.21 | 40.69 | −13.04 |
| 334 | 221 | 69.3292 | 313.9675 | 1997.43 | 15.59 | 40.80 | −12.65 |
| 335 | 221 | 69.1471 | 313.9768 | 1982.47 | 8.83 | 40.91 | −10.14 |
| 336 | 221 | 68.9651 | 313.9858 | 1964.34 | 5.40 | 41.01 | −6.40 |
| 337 | 221 | 68.7832 | 313.9949 | 1952.42 | 22.61 | 41.08 | −25.72 |
| 338 | 221 | 68.6015 | 314.0034 | 1940.51 | 3.58 | 41.15 | −21.23 |
| 339 | 221 | 68.4198 | 314.0122 | 1950.16 | 26.51 | 41.21 | −13.80 |
| 340 | 221 | 68.2382 | 314.0205 | 1969.93 | 2.33 | 41.28 | −10.39 |
| 341 | 221 | 68.0568 | 314.0288 | 1983.81 | 47.21 | 41.35 | −1.02 |
| 342 | 221 | 67.8754 | 314.0371 | 2009.92 | 16.22 | 41.37 | 1.05 |
| 343 | 221 | 67.6942 | 314.0449 | 2024.19 | 4.70 | 41.37 | −6.56 |
| 344 | 221 | 67.5131 | 314.0530 | 2040.76 | 12.49 | 41.38 | −5.86 |
| 345 | 221 | 67.3321 | 314.0608 | 2064.64 | 1.83 | 41.38 | −6.07 |
| 346 | 221 | 67.1512 | 314.0684 | 2085.37 | 5.97 | 41.39 | −6.44 |
| 347 | 221 | 66.9704 | 314.0759 | 2097.86 | 1.74 | 41.38 | −8.47 |
| 348 | 221 | 66.7898 | 314.0833 | 2121.92 | 7.30 | 41.32 | −4.50 |
| 349 | 221 | 66.6092 | 314.0906 | 2150.35 | 6.60 | 41.26 | −10.73 |
| 350 | 221 | 66.4288 | 314.0977 | 2173.81 | 3.67 | 41.19 | −16.73 |
| 351 | 221 | 66.2485 | 314.1047 | 2217.92 | 1.26 | 41.13 | −5.08 |
| 352 | 221 | 66.0683 | 314.1116 | 2252.21 | 1.10 | 41.07 | −4.61 |
| 353 | 221 | 65.8883 | 314.1184 | 2295.66 | 4.46 | 40.98 | −2.75 |
| 354 | 221 | 65.7083 | 314.1252 | 2336.10 | 1.78 | 40.87 | −3.93 |
| 355 | 221 | 65.5285 | 314.1318 | 2367.11 | 1.01 | 40.75 | −5.71 |
| 356 | 221 | 65.3488 | 314.1384 | 2413.01 | 2.33 | 40.64 | −3.85 |
| 357 | 221 | 65.1692 | 314.1448 | 2446.08 | 1.76 | 40.53 | −5.55 |
| 358 | 221 | 64.9897 | 314.1511 | 2472.32 | 2.39 | 40.42 | −4.76 |
| 359 | 221 | 64.8104 | 314.1575 | 2515.72 | 4.35 | 40.29 | −4.37 |
| 360 | 221 | 64.6312 | 314.1636 | 2536.54 | 4.67 | 40.15 | −12.35 |
| 361 | 221 | 64.4521 | 314.1697 | 2565.30 | 3.87 | 40.02 | −6.83 |
| 362 | 221 | 64.2732 | 314.1755 | 2574.39 | 0.83 | 39.89 | −4.24 |
| 363 | 221 | 64.0943 | 314.1814 | 2582.11 | 5.40 | 39.76 | −3.40 |
| 364 | 221 | 63.9156 | 314.1873 | 2599.82 | 1.91 | 39.64 | −6.77 |
| 365 | 221 | 63.7371 | 314.1929 | 2622.87 | 3.76 | 39.52 | −5.94 |
| 366 | 221 | 63.5586 | 314.1985 | 2645.29 | 4.08 | 39.41 | −4.53 |
| 367 | 221 | 63.3803 | 314.2041 | 2682.48 | 1.96 | 39.29 | −3.65 |
| 368 | 221 | 63.2021 | 314.2097 | 2732.91 | 5.11 | 39.18 | −0.10 |
| 369 | 221 | 63.0241 | 314.2151 | 2729.33 | 2.45 | 39.07 | −5.15 |
| 370 | 221 | 62.8462 | 314.2205 | 2663.74 | 11.20 | 38.99 | −17.10 |
| 371 | 221 | 62.6684 | 314.2256 | 2576.93 | 5.87 | 38.92 | −10.01 |
| 372 | 221 | 62.4908 | 314.2310 | 2561.86 | 2.43 | 38.85 | −8.56 |
| 373 | 221 | 62.3132 | 314.2361 | 2527.27 | 2.57 | 38.77 | −8.15 |
| 374 | 221 | 62.1358 | 314.2410 | 2477.87 | 5.28 | 38.70 | −17.26 |
| 375 | 221 | 61.9586 | 314.2461 | 2373.47 | 23.16 | 38.65 | −31.00 |
| 376 | 221 | 61.7815 | 314.2510 | 2206.05 | 26.34 | 38.63 | −69.11 |
| 377 | 221 | 61.6045 | 314.2559 | 1684.24 | 68.59 | 38.61 | −150.57 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 378 | 221 | 61.4277 | 314.2605 | 1299.19 | 9.98 | 38.60 | –91.48 |
| 379 | 221 | 61.2510 | 314.2654 | 935.37 | 8.01 | 38.58 | –88.65 |
| 380 | 221 | 61.0745 | 314.2700 | –136.96 | 22.67 | 38.57 | –461.75 |
| 381 | 221 | 60.8980 | 314.2747 | 536.48 | 19.35 | 38.58 | –62.40 |
| 383 | 221 | 60.5456 | 314.2837 | 145.76 | 7.22 | 38.64 | –75.17 |
| 318 | 222 | 72.2594 | 314.3967 | 2691.40 | 0.22 | 39.50 | –4.40 |
| 319 | 222 | 72.0757 | 314.4031 | 2668.24 | 3.25 | 39.61 | –5.10 |
| 320 | 222 | 71.8921 | 314.4092 | 2637.73 | 4.50 | 39.73 | –5.99 |
| 321 | 222 | 71.7085 | 314.4153 | 2600.61 | 1.48 | 39.85 | –6.16 |
| 322 | 222 | 71.5251 | 314.4211 | 2560.61 | 3.47 | 39.98 | –5.81 |
| 323 | 222 | 71.3418 | 314.4270 | 2519.66 | 2.74 | 40.10 | –5.12 |
| 324 | 222 | 71.1585 | 314.4326 | 2485.68 | 8.04 | 40.22 | –5.84 |
| 325 | 222 | 70.9754 | 314.4382 | 2438.09 | 49.47 | 40.34 | –14.81 |
| 326 | 222 | 70.7924 | 314.4436 | 2398.62 | 7.94 | 40.47 | –26.35 |
| 327 | 222 | 70.6094 | 314.4490 | 2385.17 | 18.39 | 40.60 | –9.62 |
| 328 | 222 | 70.4266 | 314.4541 | 2326.43 | 4.76 | 40.72 | –16.69 |
| 329 | 222 | 70.2438 | 314.4595 | 2294.54 | 22.14 | 40.85 | –11.98 |
| 330 | 222 | 70.0612 | 314.4644 | 2252.85 | 20.48 | 40.97 | –4.67 |
| 331 | 222 | 69.8787 | 314.4695 | 2226.46 | 10.79 | 41.09 | –8.54 |
| 332 | 222 | 69.6962 | 314.4744 | 2171.63 | 11.01 | 41.19 | –0.08 |
| 333 | 222 | 69.5139 | 314.4790 | 2120.05 | 6.87 | 41.30 | 3.75 |
| 334 | 222 | 69.3317 | 314.4836 | 2082.33 | 4.64 | 41.41 | –16.89 |
| 335 | 222 | 69.1496 | 314.4883 | 2063.15 | 21.53 | 41.51 | 3.97 |
| 336 | 222 | 68.9675 | 314.4929 | 2056.10 | 7.36 | 41.61 | –10.37 |
| 337 | 222 | 68.7856 | 314.4973 | 2061.93 | 13.60 | 41.67 | –9.86 |
| 338 | 222 | 68.6038 | 314.5017 | 2056.23 | 6.12 | 41.74 | –2.37 |
| 339 | 222 | 68.4221 | 314.5059 | 2057.36 | 3.18 | 41.80 | –12.52 |
| 340 | 222 | 68.2406 | 314.5103 | 2066.99 | 3.00 | 41.86 | –9.21 |
| 341 | 222 | 68.0591 | 314.5144 | 2066.50 | 6.14 | 41.92 | –11.22 |
| 342 | 222 | 67.8777 | 314.5183 | 2089.42 | 8.22 | 41.94 | –6.53 |
| 343 | 222 | 67.6965 | 314.5225 | 2108.24 | 0.55 | 41.94 | –7.29 |
| 344 | 222 | 67.5153 | 314.5264 | 2131.99 | 2.72 | 41.94 | –3.87 |
| 345 | 222 | 67.3343 | 314.5303 | 2145.10 | 8.36 | 41.94 | –4.48 |
| 346 | 222 | 67.1534 | 314.5342 | 2160.31 | 3.35 | 41.94 | –6.66 |
| 347 | 222 | 66.9726 | 314.5378 | 2183.63 | 1.67 | 41.93 | –7.00 |
| 348 | 222 | 66.7919 | 314.5415 | 2207.16 | 4.32 | 41.86 | –8.87 |
| 349 | 222 | 66.6114 | 314.5452 | 2229.75 | 3.62 | 41.80 | –7.69 |
| 350 | 222 | 66.4309 | 314.5488 | 2258.88 | 6.82 | 41.73 | –3.52 |
| 351 | 222 | 66.2506 | 314.5522 | 2284.06 | 3.12 | 41.67 | –4.54 |
| 352 | 222 | 66.0704 | 314.5557 | 2315.28 | 14.27 | 41.60 | –3.45 |
| 353 | 222 | 65.8903 | 314.5591 | 2355.24 | 1.70 | 41.51 | –3.91 |
| 354 | 222 | 65.7104 | 314.5625 | 2389.67 | 2.25 | 41.40 | –5.11 |
| 355 | 222 | 65.5305 | 314.5659 | 2426.77 | 1.79 | 41.29 | –4.10 |
| 356 | 222 | 65.3508 | 314.5691 | 2468.80 | 1.72 | 41.17 | –4.13 |
| 357 | 222 | 65.1712 | 314.5723 | 2503.50 | 3.18 | 41.06 | –6.17 |
| 358 | 222 | 64.9917 | 314.5754 | 2549.88 | 3.28 | 40.95 | –5.79 |
| 359 | 222 | 64.8124 | 314.5786 | 2588.52 | 22.28 | 40.82 | –3.25 |
| 360 | 222 | 64.6332 | 314.5818 | 2622.84 | 3.68 | 40.69 | –4.51 |
| 361 | 222 | 64.4541 | 314.5847 | 2640.64 | 2.95 | 40.56 | –6.16 |
| 362 | 222 | 64.2751 | 314.5876 | 2646.95 | 1.98 | 40.44 | –4.31 |
| 363 | 222 | 64.0963 | 314.5906 | 2648.27 | 1.02 | 40.31 | –4.35 |
| 364 | 222 | 63.9175 | 314.5935 | 2665.10 | 4.84 | 40.19 | –3.96 |
| 365 | 222 | 63.7390 | 314.5964 | 2688.50 | 1.78 | 40.08 | –3.18 |
| 366 | 222 | 63.5605 | 314.5991 | 2706.27 | 1.45 | 39.97 | –5.17 |
| 367 | 222 | 63.3822 | 314.6021 | 2753.06 | 4.10 | 39.86 | –1.85 |
| 368 | 222 | 63.2040 | 314.6047 | 2769.70 | 2.96 | 39.75 | –9.33 |
| 369 | 222 | 63.0259 | 314.6074 | 2780.61 | 4.69 | 39.64 | –4.89 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 370 | 222 | 62.8480 | 314.6101 | 2737.97 | 6.11 | 39.57 | 10.05 |
| 371 | 222 | 62.6702 | 314.6128 | 2700.19 | 10.53 | 39.51 | –2.31 |
| 372 | 222 | 62.4925 | 314.6152 | 2655.39 | 6.78 | 39.44 | –8.22 |
| 373 | 222 | 62.3150 | 314.6179 | 2616.18 | 14.48 | 39.38 | –9.59 |
| 374 | 222 | 62.1376 | 314.6204 | 2485.62 | 13.62 | 39.31 | –40.09 |
| 375 | 222 | 61.9604 | 314.6230 | 2336.20 | 13.70 | 39.26 | –61.06 |
| 376 | 222 | 61.7832 | 314.6255 | 2015.28 | 43.30 | 39.25 | –110.07 |
| 377 | 222 | 61.6063 | 314.6279 | 1557.04 | 17.86 | 39.24 | –181.35 |
| 378 | 222 | 61.4294 | 314.6301 | 1446.70 | 5.64 | 39.23 | –121.31 |
| 379 | 222 | 61.2527 | 314.6326 | 1332.64 | 7.99 | 39.23 | 60.66 |
| 380 | 222 | 61.0761 | 314.6350 | 1096.51 | 14.43 | 39.22 | –93.76 |
| 381 | 222 | 60.8997 | 314.6372 | 722.24 | 11.01 | 39.23 | 9.68 |
| 382 | 222 | 60.7234 | 314.6396 | 242.72 | 7.01 | 39.27 | 13.73 |
| 383 | 222 | 60.5473 | 314.6418 | 1055.10 | 30.03 | 39.31 | 480.49 |
| 384 | 222 | 60.3713 | 314.6440 | –60.02 | 46.00 | 39.34 | –359.17 |
| 385 | 222 | 60.1954 | 314.6462 | –45.46 | 67.17 | 39.38 | 954.54 |
| 386 | 222 | 60.0197 | 314.6484 | 60.17 | 58.46 | 39.42 | 198.91 |
| 387 | 222 | 59.8441 | 314.6506 | 365.77 | 29.42 | 39.47 | 1365.77 |
| 318 | 223 | 72.2603 | 315.0000 | 2749.73 | 0.11 | 40.11 | –3.25 |
| 319 | 223 | 72.0766 | 315.0000 | 2726.08 | 0.93 | 40.22 | –3.78 |
| 320 | 223 | 71.8930 | 315.0000 | 2697.90 | 0.72 | 40.34 | –5.22 |
| 321 | 223 | 71.7095 | 315.0000 | 2666.09 | 3.05 | 40.47 | –7.03 |
| 322 | 223 | 71.5260 | 315.0000 | 2632.97 | 4.77 | 40.59 | –6.35 |
| 323 | 223 | 71.3427 | 315.0000 | 2592.82 | 2.29 | 40.72 | –6.20 |
| 324 | 223 | 71.1595 | 315.0000 | 2559.16 | 6.20 | 40.84 | –8.26 |
| 325 | 223 | 70.9763 | 315.0000 | 2524.91 | 8.15 | 40.97 | –10.41 |
| 326 | 223 | 70.7933 | 315.0000 | 2483.84 | 3.65 | 41.09 | –9.77 |
| 327 | 223 | 70.6103 | 315.0000 | 2449.39 | 11.28 | 41.22 | –7.10 |
| 328 | 223 | 70.4275 | 315.0000 | 2418.38 | 12.04 | 41.34 | –6.02 |
| 329 | 223 | 70.2447 | 315.0000 | 2360.91 | 7.34 | 41.47 | –9.90 |
| 330 | 223 | 70.0621 | 315.0000 | 2335.90 | 8.99 | 41.59 | –16.90 |
| 331 | 223 | 69.8795 | 315.0000 | 2295.15 | 6.49 | 41.70 | –11.99 |
| 332 | 223 | 69.6971 | 315.0000 | 2271.75 | 33.72 | 41.81 | –5.99 |
| 333 | 223 | 69.5147 | 315.0000 | 2191.50 | 7.09 | 41.91 | –39.85 |
| 334 | 223 | 69.3325 | 315.0000 | 2193.59 | 4.22 | 42.01 | –9.27 |
| 335 | 223 | 69.1504 | 315.0000 | 2165.88 | 19.53 | 42.12 | –5.39 |
| 336 | 223 | 68.9683 | 315.0000 | 2141.47 | 50.09 | 42.21 | –12.91 |
| 337 | 223 | 68.7864 | 315.0000 | 2142.05 | 5.03 | 42.27 | –8.85 |
| 338 | 223 | 68.6046 | 315.0000 | 2127.12 | 9.08 | 42.33 | –10.53 |
| 339 | 223 | 68.4229 | 315.0000 | 2140.12 | 2.45 | 42.38 | –6.26 |
| 340 | 223 | 68.2413 | 315.0000 | 2148.40 | 15.56 | 42.44 | –3.47 |
| 341 | 223 | 68.0598 | 315.0000 | 2159.84 | 1.36 | 42.50 | –7.42 |
| 342 | 223 | 67.8785 | 315.0000 | 2171.74 | 4.36 | 42.51 | –6.32 |
| 343 | 223 | 67.6972 | 315.0000 | 2191.91 | 1.01 | 42.51 | –5.72 |
| 344 | 223 | 67.5161 | 315.0000 | 2204.23 | 1.52 | 42.50 | –5.73 |
| 345 | 223 | 67.3351 | 315.0000 | 2226.13 | 3.45 | 42.50 | –7.74 |
| 346 | 223 | 67.1541 | 315.0000 | 2243.15 | 0.97 | 42.49 | –3.94 |
| 347 | 223 | 66.9733 | 315.0000 | 2260.52 | 3.84 | 42.48 | –9.50 |
| 348 | 223 | 66.7927 | 315.0000 | 2287.01 | 1.78 | 42.41 | –3.05 |
| 349 | 223 | 66.6121 | 315.0000 | 2305.95 | 11.98 | 42.34 | –1.82 |
| 350 | 223 | 66.4317 | 315.0000 | 2322.33 | 0.78 | 42.27 | –5.61 |
| 351 | 223 | 66.2513 | 315.0000 | 2352.84 | 2.27 | 42.20 | –3.19 |
| 352 | 223 | 66.0711 | 315.0000 | 2380.95 | 7.06 | 42.14 | –5.69 |
| 353 | 223 | 65.8910 | 315.0000 | 2415.46 | 0.69 | 42.04 | –3.52 |
| 354 | 223 | 65.7111 | 315.0000 | 2447.08 | 1.91 | 41.93 | –3.17 |
| 355 | 223 | 65.5312 | 315.0000 | 2482.54 | 2.43 | 41.82 | –2.52 |
| 356 | 223 | 65.3515 | 315.0000 | 2513.02 | 1.69 | 41.70 | –5.96 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 357 | 223 | 65.1719 | 315.0000 | 2555.52 | 1.05 | 41.59 | −4.75 |
| 358 | 223 | 64.9924 | 315.0000 | 2598.44 | 4.53 | 41.48 | −4.34 |
| 359 | 223 | 64.8130 | 315.0000 | 2642.94 | 1.71 | 41.35 | −6.08 |
| 360 | 223 | 64.6338 | 315.0000 | 2694.14 | 0.61 | 41.23 | −4.02 |
| 361 | 223 | 64.4547 | 315.0000 | 2715.35 | 3.03 | 41.10 | −2.57 |
| 362 | 223 | 64.2757 | 315.0000 | 2713.03 | 2.04 | 40.98 | −5.69 |
| 363 | 223 | 64.0969 | 315.0000 | 2717.53 | 2.01 | 40.85 | −3.19 |
| 364 | 223 | 63.9182 | 315.0000 | 2736.10 | 3.04 | 40.74 | −2.30 |
| 365 | 223 | 63.7396 | 315.0000 | 2755.20 | 3.57 | 40.63 | −4.55 |
| 366 | 223 | 63.5611 | 315.0000 | 2768.60 | 5.04 | 40.53 | −2.32 |
| 367 | 223 | 63.3828 | 315.0000 | 2798.31 | 2.94 | 40.42 | −1.16 |
| 368 | 223 | 63.2046 | 315.0000 | 2848.39 | 3.28 | 40.32 | −8.05 |
| 369 | 223 | 63.0265 | 315.0000 | 2844.47 | 1.62 | 40.22 | −6.35 |
| 370 | 223 | 62.8486 | 315.0000 | 2802.92 | 4.68 | 40.15 | −1.54 |
| 371 | 223 | 62.6708 | 315.0000 | 2780.08 | 2.86 | 40.09 | −3.27 |
| 372 | 223 | 62.4931 | 315.0000 | 2738.67 | 4.82 | 40.04 | −6.12 |
| 373 | 223 | 62.3156 | 315.0000 | 2706.01 | 5.25 | 39.98 | −14.78 |
| 374 | 223 | 62.1382 | 315.0000 | 2573.17 | 6.53 | 39.92 | −33.75 |
| 375 | 223 | 61.9609 | 315.0000 | 2363.44 | 22.21 | 39.88 | −100.06 |
| 376 | 223 | 61.7838 | 315.0000 | 2188.62 | 93.97 | 39.88 | −71.29 |
| 377 | 223 | 61.6068 | 315.0000 | 1773.96 | 82.47 | 39.87 | −29.38 |
| 378 | 223 | 61.4300 | 315.0000 | 1624.77 | 18.73 | 39.87 | 212.47 |
| 379 | 223 | 61.2533 | 315.0000 | 1554.59 | 28.96 | 39.87 | 185.43 |
| 380 | 223 | 61.0767 | 315.0000 | 1223.80 | 42.83 | 39.87 | −101.35 |
| 381 | 223 | 60.9003 | 315.0000 | 1022.79 | 95.78 | 39.89 | 134.88 |
| 382 | 223 | 60.7240 | 315.0000 | 729.74 | 39.28 | 39.94 | 278.74 |
| 383 | 223 | 60.5478 | 315.0000 | 737.31 | 44.88 | 39.98 | 702.56 |
| 384 | 223 | 60.3718 | 315.0000 | 68.59 | 36.57 | 40.02 | 1068.59 |
| 385 | 223 | 60.1960 | 315.0000 | 71.59 | 61.00 | 40.06 | 1071.59 |
| 386 | 223 | 60.0203 | 315.0000 | 254.56 | 44.39 | 40.11 | 64.00 |
| 387 | 223 | 59.8447 | 315.0000 | 315.51 | 29.94 | 40.17 | −5.72 |
| 318 | 224 | 72.2594 | 315.6030 | 2800.42 | 0.07 | 40.69 | −3.18 |
| 319 | 224 | 72.0757 | 315.5967 | 2781.90 | 4.22 | 40.81 | −2.74 |
| 320 | 224 | 71.8921 | 315.5906 | 2759.63 | 1.00 | 40.93 | −3.29 |
| 321 | 224 | 71.7085 | 315.5845 | 2733.10 | 1.01 | 41.06 | −4.40 |
| 322 | 224 | 71.5251 | 315.5786 | 2699.28 | 2.35 | 41.19 | −6.17 |
| 323 | 224 | 71.3418 | 315.5728 | 2665.67 | 6.18 | 41.32 | −3.26 |
| 324 | 224 | 71.1585 | 315.5671 | 2630.23 | 5.88 | 41.45 | −10.97 |
| 325 | 224 | 70.9754 | 315.5615 | 2593.04 | 3.14 | 41.57 | −6.61 |
| 326 | 224 | 70.7924 | 315.5562 | 2559.84 | 8.91 | 41.70 | −6.79 |
| 327 | 224 | 70.6094 | 315.5508 | 2519.68 | 3.07 | 41.82 | −11.03 |
| 328 | 224 | 70.4266 | 315.5457 | 2488.93 | 5.88 | 41.95 | −5.31 |
| 329 | 224 | 70.2438 | 315.5403 | 2453.81 | 2.92 | 42.07 | −7.54 |
| 330 | 224 | 70.0612 | 315.5354 | 2401.50 | 7.39 | 42.20 | −5.57 |
| 331 | 224 | 69.8787 | 315.5303 | 2385.30 | 3.62 | 42.30 | −4.99 |
| 332 | 224 | 69.6962 | 315.5254 | 2340.78 | 3.53 | 42.40 | −7.97 |
| 333 | 224 | 69.5139 | 315.5208 | 2300.09 | 10.08 | 42.50 | −18.50 |
| 334 | 224 | 69.3317 | 315.5161 | 2289.65 | 76.29 | 42.60 | −7.49 |
| 335 | 224 | 69.1496 | 315.5115 | 2243.46 | 4.94 | 42.71 | −25.89 |
| 336 | 224 | 68.9675 | 315.5068 | 2218.71 | 17.28 | 42.80 | −4.55 |
| 337 | 224 | 68.7856 | 315.5024 | 2232.06 | 5.31 | 42.85 | −4.90 |
| 338 | 224 | 68.6038 | 315.4980 | 2231.27 | 1.43 | 42.90 | −7.31 |
| 339 | 224 | 68.4221 | 315.4939 | 2228.57 | 10.12 | 42.95 | −9.75 |
| 340 | 224 | 68.2406 | 315.4895 | 2239.60 | 7.44 | 43.01 | −5.43 |
| 341 | 224 | 68.0591 | 315.4854 | 2238.00 | 1.57 | 43.06 | −6.55 |
| 342 | 224 | 67.8777 | 315.4814 | 2249.78 | 0.85 | 43.07 | −6.86 |
| 343 | 224 | 67.6965 | 315.4773 | 2267.40 | 96.24 | 43.06 | −3.24 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 344 | 224 | 67.5153 | 315.4734 | 2292.07 | 8.25 | 43.05 | −3.69 |
| 345 | 224 | 67.3343 | 315.4695 | 2300.41 | 1.81 | 43.04 | −3.47 |
| 346 | 224 | 67.1534 | 315.4656 | 2315.88 | 6.83 | 43.03 | −4.36 |
| 347 | 224 | 66.9726 | 315.4619 | 2333.48 | 13.82 | 43.01 | −3.14 |
| 348 | 224 | 66.7919 | 315.4583 | 2348.76 | 0.89 | 42.94 | −3.01 |
| 349 | 224 | 66.6114 | 315.4546 | 2362.92 | 2.31 | 42.87 | −5.46 |
| 350 | 224 | 66.4309 | 315.4509 | 2384.45 | 1.73 | 42.80 | −2.85 |
| 351 | 224 | 66.2506 | 315.4475 | 2411.70 | 3.98 | 42.73 | −2.29 |
| 352 | 224 | 66.0704 | 315.4441 | 2436.10 | 0.87 | 42.66 | −2.46 |
| 353 | 224 | 65.8903 | 315.4407 | 2472.39 | 3.64 | 42.57 | −1.62 |
| 354 | 224 | 65.7104 | 315.4373 | 2494.64 | 1.74 | 42.45 | −1.76 |
| 355 | 224 | 65.5305 | 315.4338 | 2500.50 | 0.66 | 42.34 | −2.73 |
| 356 | 224 | 65.3508 | 315.4307 | 2530.23 | 0.67 | 42.23 | −5.40 |
| 357 | 224 | 65.1712 | 315.4275 | 2583.15 | 11.15 | 42.12 | −2.73 |
| 358 | 224 | 64.9917 | 315.4243 | 2627.82 | 1.33 | 42.01 | −4.02 |
| 359 | 224 | 64.8124 | 315.4211 | 2677.35 | 5.87 | 41.88 | −4.16 |
| 360 | 224 | 64.6332 | 315.4180 | 2728.31 | 1.46 | 41.76 | −2.68 |
| 361 | 224 | 64.4541 | 315.4150 | 2755.03 | 1.22 | 41.64 | −0.90 |
| 362 | 224 | 64.2751 | 315.4121 | 2767.48 | 1.16 | 41.51 | −1.15 |
| 363 | 224 | 64.0963 | 315.4092 | 2775.35 | 3.38 | 41.39 | −1.10 |
| 364 | 224 | 63.9175 | 315.4062 | 2790.36 | 1.39 | 41.28 | −2.22 |
| 365 | 224 | 63.7390 | 315.4033 | 2815.70 | 4.34 | 41.18 | −1.40 |
| 366 | 224 | 63.5605 | 315.4006 | 2830.98 | 3.18 | 41.08 | −1.42 |
| 367 | 224 | 63.3822 | 315.3977 | 2824.14 | 10.05 | 40.98 | −0.52 |
| 368 | 224 | 63.2040 | 315.3950 | 2832.00 | 4.12 | 40.89 | −13.79 |
| 369 | 224 | 63.0259 | 315.3923 | 2824.58 | 20.49 | 40.79 | −10.95 |
| 370 | 224 | 62.8480 | 315.3896 | 2770.98 | 81.36 | 40.73 | −25.53 |
| 371 | 224 | 62.6702 | 315.3870 | 2727.92 | 23.91 | 40.68 | −1.50 |
| 372 | 224 | 62.4925 | 315.3845 | 2733.13 | 17.64 | 40.63 | −8.09 |
| 373 | 224 | 62.3150 | 315.3818 | 2658.90 | 17.37 | 40.58 | −18.25 |
| 374 | 224 | 62.1376 | 315.3794 | 2572.74 | 16.25 | 40.53 | −15.83 |
| 375 | 224 | 61.9604 | 315.3767 | 2423.27 | 16.65 | 40.49 | −50.27 |
| 376 | 224 | 61.7832 | 315.3743 | 2196.54 | 15.13 | 40.49 | −47.04 |
| 377 | 224 | 61.6063 | 315.3718 | 1914.97 | 93.06 | 40.50 | 49.86 |
| 378 | 224 | 61.4294 | 315.3696 | 1717.23 | 52.15 | 40.50 | −56.01 |
| 379 | 224 | 61.2527 | 315.3672 | 1790.84 | 84.13 | 40.51 | −60.61 |
| 380 | 224 | 61.0761 | 315.3647 | 1593.89 | 49.87 | 40.51 | −102.44 |
| 381 | 224 | 60.8997 | 315.3625 | 1370.40 | 97.77 | 40.54 | −154.92 |
| 382 | 224 | 60.7234 | 315.3601 | 818.94 | 34.53 | 40.59 | −65.50 |
| 383 | 224 | 60.5473 | 315.3579 | 263.42 | 41.30 | 40.64 | −56.32 |
| 384 | 224 | 60.3713 | 315.3557 | 104.38 | 97.26 | 40.69 | −17.64 |
| 385 | 224 | 60.1954 | 315.3535 | 207.78 | 64.67 | 40.74 | −14.65 |
| 386 | 224 | 60.0197 | 315.3513 | 326.70 | 43.29 | 40.78 | −86.17 |
| 387 | 224 | 59.8441 | 315.3491 | 406.04 | 31.12 | 40.85 | 29.97 |
| 318 | 225 | 72.2565 | 316.2058 | 2851.35 | 0.08 | 41.26 | −2.92 |
| 319 | 225 | 72.0728 | 316.1934 | 2834.33 | 7.31 | 41.39 | −2.58 |
| 320 | 225 | 71.8892 | 316.1812 | 2816.15 | 1.20 | 41.52 | −3.20 |
| 321 | 225 | 71.7057 | 316.1689 | 2786.02 | 4.91 | 41.65 | −4.28 |
| 322 | 225 | 71.5223 | 316.1572 | 2757.27 | 1.44 | 41.78 | −3.23 |
| 323 | 225 | 71.3390 | 316.1458 | 2719.44 | 1.09 | 41.91 | −4.09 |
| 324 | 225 | 71.1558 | 316.1343 | 2687.33 | 22.63 | 42.04 | −5.97 |
| 325 | 225 | 70.9727 | 316.1233 | 2654.85 | 3.06 | 42.18 | −2.85 |
| 326 | 225 | 70.7897 | 316.1123 | 2618.97 | 8.84 | 42.30 | −10.41 |
| 327 | 225 | 70.6068 | 316.1016 | 2592.91 | 2.40 | 42.42 | −6.56 |
| 328 | 225 | 70.4240 | 316.0911 | 2566.12 | 3.00 | 42.55 | −4.88 |
| 329 | 225 | 70.2413 | 316.0808 | 2529.76 | 4.50 | 42.67 | −13.55 |
| 330 | 225 | 70.0586 | 316.0708 | 2495.59 | 13.47 | 42.80 | −3.06 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 331 | 225 | 69.8761 | 316.0608 | 2453.46 | 5.04 | 42.90 | −7.08 |
| 332 | 225 | 69.6937 | 316.0510 | 2413.18 | 3.02 | 43.00 | −8.00 |
| 333 | 225 | 69.5114 | 316.0415 | 2391.29 | 6.01 | 43.10 | −6.99 |
| 334 | 225 | 69.3292 | 316.0322 | 2365.50 | 7.56 | 43.20 | −4.89 |
| 335 | 225 | 69.1471 | 316.0229 | 2364.27 | 4.11 | 43.29 | −4.39 |
| 336 | 225 | 68.9651 | 316.0139 | 2329.79 | 5.14 | 43.38 | −6.11 |
| 337 | 225 | 68.7832 | 316.0049 | 2328.36 | 24.31 | 43.43 | −4.66 |
| 338 | 225 | 68.6015 | 315.9963 | 2312.37 | 5.93 | 43.48 | −10.27 |
| 339 | 225 | 68.4198 | 315.9875 | 2316.49 | 2.94 | 43.53 | −3.57 |
| 340 | 225 | 68.2382 | 315.9792 | 2314.91 | 1.07 | 43.57 | −3.89 |
| 341 | 225 | 68.0568 | 315.9709 | 2313.81 | 1.03 | 43.62 | −8.25 |
| 342 | 225 | 67.8754 | 315.9626 | 2330.93 | 1.85 | 43.63 | −1.97 |
| 343 | 225 | 67.6942 | 315.9548 | 2338.35 | 3.33 | 43.62 | −3.98 |
| 344 | 225 | 67.5131 | 315.9468 | 2353.22 | 4.14 | 43.60 | −4.28 |
| 345 | 225 | 67.3321 | 315.9390 | 2368.86 | 2.69 | 43.59 | −2.48 |
| 346 | 225 | 67.1512 | 315.9314 | 2385.03 | 2.29 | 43.57 | −2.84 |
| 347 | 225 | 66.9704 | 315.9238 | 2396.91 | 0.72 | 43.55 | −3.17 |
| 348 | 225 | 66.7898 | 315.9165 | 2407.14 | 0.62 | 43.48 | −2.19 |
| 349 | 225 | 66.6092 | 315.9092 | 2422.06 | 0.80 | 43.41 | −3.23 |
| 350 | 225 | 66.4288 | 315.9021 | 2444.06 | 32.54 | 43.33 | −1.87 |
| 351 | 225 | 66.2485 | 315.8950 | 2466.00 | 2.36 | 43.26 | −3.68 |
| 352 | 225 | 66.0683 | 315.8882 | 2490.17 | 5.33 | 43.19 | −1.12 |
| 353 | 225 | 65.8883 | 315.8813 | 2504.23 | 9.09 | 43.09 | −0.07 |
| 354 | 225 | 65.7083 | 315.8745 | 2493.67 | 4.23 | 42.98 | −1.48 |
| 355 | 225 | 65.5285 | 315.8679 | 2476.70 | 1.24 | 42.87 | −4.19 |
| 356 | 225 | 65.3488 | 315.8613 | 2496.62 | 2.58 | 42.75 | −6.46 |
| 357 | 225 | 65.1692 | 315.8550 | 2534.51 | 1.11 | 42.64 | −4.99 |
| 358 | 225 | 64.9897 | 315.8486 | 2595.95 | 2.01 | 42.53 | −3.38 |
| 359 | 225 | 64.8104 | 315.8423 | 2647.11 | 1.68 | 42.41 | −4.25 |
| 360 | 225 | 64.6312 | 315.8362 | 2706.87 | 2.22 | 42.29 | −4.56 |
| 361 | 225 | 64.4521 | 315.8301 | 2735.72 | 2.58 | 42.17 | −6.22 |
| 362 | 225 | 64.2732 | 315.8242 | 2766.82 | 3.49 | 42.05 | −1.90 |
| 363 | 225 | 64.0943 | 315.8184 | 2788.26 | 1.89 | 41.93 | −1.04 |
| 364 | 225 | 63.9156 | 315.8125 | 2806.58 | 4.16 | 41.82 | −2.59 |
| 365 | 225 | 63.7371 | 315.8069 | 2811.01 | 13.10 | 41.73 | −2.50 |
| 366 | 225 | 63.5586 | 315.8013 | 2799.25 | 6.34 | 41.64 | −2.65 |
| 367 | 225 | 63.3803 | 315.7957 | 2751.71 | 4.95 | 41.54 | −5.64 |
| 368 | 225 | 63.2021 | 315.7900 | 2724.48 | 7.42 | 41.45 | −22.48 |
| 369 | 225 | 63.0241 | 315.7847 | 2711.32 | 85.31 | 41.36 | −23.58 |
| 370 | 225 | 62.8462 | 315.7793 | 2271.25 | 71.66 | 41.30 | −106.28 |
| 371 | 225 | 62.6684 | 315.7742 | 2261.48 | 48.58 | 41.26 | −42.98 |
| 372 | 225 | 62.4908 | 315.7688 | 2532.81 | 21.29 | 41.22 | −35.64 |
| 373 | 225 | 62.3132 | 315.7637 | 2566.53 | 7.65 | 41.17 | −15.01 |
| 374 | 225 | 62.1358 | 315.7588 | 2437.76 | 16.37 | 41.13 | −34.10 |
| 375 | 225 | 61.9586 | 315.7537 | 2325.32 | 35.56 | 41.10 | −60.25 |
| 376 | 225 | 61.7815 | 315.7488 | 1995.03 | 9.45 | 41.11 | −92.13 |
| 377 | 225 | 61.6045 | 315.7439 | 1663.00 | 50.33 | 41.12 | −27.18 |
| 378 | 225 | 61.4277 | 315.7393 | 1741.38 | 39.49 | 41.13 | −61.54 |
| 379 | 225 | 61.2510 | 315.7344 | 1913.62 | 55.05 | 41.14 | −43.70 |
| 380 | 225 | 61.0745 | 315.7297 | 1867.20 | 65.43 | 41.15 | −22.66 |
| 381 | 225 | 60.8980 | 315.7251 | 1399.24 | 25.25 | 41.19 | −97.25 |
| 382 | 225 | 60.7218 | 315.7205 | 882.08 | 90.23 | 41.24 | −212.24 |
| 383 | 225 | 60.5456 | 315.7161 | 497.78 | 309.86 | 41.30 | −107.04 |
| 384 | 225 | 60.3697 | 315.7117 | 169.42 | 51.41 | 41.35 | −15.86 |
| 385 | 225 | 60.1938 | 315.7073 | 204.72 | 142.23 | 41.41 | 15.88 |
| 386 | 225 | 60.0181 | 315.7029 | 281.35 | 52.86 | 41.46 | −50.68 |
| 387 | 225 | 59.8425 | 315.6985 | 397.73 | 37.41 | 41.53 | −87.57 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 318 | 226 | 72.2516 | 316.8086 | 2899.41 | 0.08 | 41.82 | −2.45 |
| 319 | 226 | 72.0680 | 316.7898 | 2883.30 | 1.16 | 41.95 | −2.87 |
| 320 | 226 | 71.8845 | 316.7712 | 2861.74 | 1.11 | 42.09 | −3.34 |
| 321 | 226 | 71.7010 | 316.7532 | 2840.11 | 0.85 | 42.23 | −2.14 |
| 322 | 226 | 71.5177 | 316.7356 | 2808.87 | 1.26 | 42.36 | −2.66 |
| 323 | 226 | 71.3345 | 316.7183 | 2780.09 | 7.80 | 42.49 | −4.57 |
| 324 | 226 | 71.1513 | 316.7012 | 2749.08 | 4.16 | 42.63 | −4.39 |
| 325 | 226 | 70.9682 | 316.6846 | 2719.79 | 6.27 | 42.76 | −3.11 |
| 326 | 226 | 70.7853 | 316.6682 | 2690.76 | 3.17 | 42.89 | −5.40 |
| 327 | 226 | 70.6024 | 316.6521 | 2660.52 | 2.30 | 43.01 | −4.88 |
| 328 | 226 | 70.4196 | 316.6365 | 2634.28 | 0.74 | 43.14 | −5.25 |
| 329 | 226 | 70.2370 | 316.6211 | 2590.52 | 4.92 | 43.26 | −5.63 |
| 330 | 226 | 70.0544 | 316.6060 | 2551.48 | 4.16 | 43.39 | −8.03 |
| 331 | 226 | 69.8719 | 316.5911 | 2532.76 | 1.60 | 43.49 | −3.77 |
| 332 | 226 | 69.6895 | 316.5764 | 2499.46 | 6.33 | 43.58 | −4.29 |
| 333 | 226 | 69.5073 | 316.5620 | 2472.62 | 2.79 | 43.68 | −6.57 |
| 334 | 226 | 69.3251 | 316.5481 | 2432.63 | 4.72 | 43.77 | −15.50 |
| 335 | 226 | 69.1431 | 316.5342 | 2422.74 | 6.30 | 43.87 | −3.97 |
| 336 | 226 | 68.9611 | 316.5208 | 2401.09 | 1.89 | 43.95 | −10.09 |
| 337 | 226 | 68.7793 | 316.5073 | 2391.76 | 1.95 | 44.00 | −7.16 |
| 338 | 226 | 68.5975 | 316.4941 | 2393.98 | 1.83 | 44.04 | −7.55 |
| 339 | 226 | 68.4159 | 316.4814 | 2389.58 | 1.69 | 44.09 | −1.89 |
| 340 | 226 | 68.2343 | 316.4687 | 2385.55 | 4.89 | 44.13 | −6.04 |
| 341 | 226 | 68.0529 | 316.4563 | 2389.50 | 0.48 | 44.18 | −5.28 |
| 342 | 226 | 67.8716 | 316.4441 | 2396.37 | 4.20 | 44.18 | −1.78 |
| 343 | 226 | 67.6904 | 316.4319 | 2407.84 | 0.83 | 44.16 | −4.40 |
| 344 | 226 | 67.5094 | 316.4202 | 2421.44 | 1.15 | 44.14 | −4.72 |
| 345 | 226 | 67.3284 | 316.4084 | 2434.43 | 1.20 | 44.13 | −3.29 |
| 346 | 226 | 67.1475 | 316.3970 | 2448.67 | 0.52 | 44.11 | −2.24 |
| 347 | 226 | 66.9668 | 316.3857 | 2454.54 | 1.55 | 44.08 | −1.53 |
| 348 | 226 | 66.7862 | 316.3748 | 2464.50 | 0.67 | 44.01 | −1.58 |
| 349 | 226 | 66.6057 | 316.3638 | 2473.86 | 1.12 | 43.93 | −1.26 |
| 350 | 226 | 66.4253 | 316.3530 | 2476.32 | 0.75 | 43.86 | −0.75 |
| 351 | 226 | 66.2450 | 316.3425 | 2490.37 | 1.21 | 43.78 | −0.80 |
| 352 | 226 | 66.0648 | 316.3320 | 2481.05 | 3.61 | 43.71 | −3.12 |
| 353 | 226 | 65.8848 | 316.3218 | 2469.78 | 1.05 | 43.61 | −2.65 |
| 354 | 226 | 65.7049 | 316.3118 | 2434.49 | 4.00 | 43.50 | 21.93 |
| 355 | 226 | 65.5251 | 316.3018 | 2402.70 | 7.06 | 43.39 | −3.41 |
| 356 | 226 | 65.3454 | 316.2920 | 2408.44 | 3.23 | 43.28 | −9.15 |
| 357 | 226 | 65.1658 | 316.2825 | 2455.76 | 1.51 | 43.16 | −9.61 |
| 358 | 226 | 64.9864 | 316.2729 | 2515.55 | 1.46 | 43.05 | −6.17 |
| 359 | 226 | 64.8071 | 316.2637 | 2579.65 | 2.92 | 42.94 | −4.97 |
| 360 | 226 | 64.6279 | 316.2544 | 2624.95 | 14.04 | 42.82 | −6.24 |
| 361 | 226 | 64.4489 | 316.2454 | 2653.16 | 12.77 | 42.70 | −5.50 |
| 362 | 226 | 64.2700 | 316.2363 | 2693.16 | 2.65 | 42.59 | −4.23 |
| 363 | 226 | 64.0912 | 316.2275 | 2737.56 | 2.16 | 42.47 | −2.96 |
| 364 | 226 | 63.9125 | 316.2187 | 2760.67 | 2.55 | 42.37 | −3.12 |
| 365 | 226 | 63.7339 | 316.2102 | 2741.94 | 3.49 | 42.28 | −2.23 |
| 366 | 226 | 63.5555 | 316.2017 | 2710.24 | 1.57 | 42.19 | −8.88 |
| 367 | 226 | 63.3772 | 316.1934 | 2636.39 | 2.34 | 42.10 | −16.75 |
| 368 | 226 | 63.1991 | 316.1851 | 2559.87 | 3.64 | 42.01 | −48.81 |
| 369 | 226 | 63.0210 | 316.1770 | 2365.15 | 54.76 | 41.92 | −85.99 |
| 370 | 226 | 62.8432 | 316.1689 | 1789.68 | 76.46 | 41.88 | −242.29 |
| 371 | 226 | 62.6654 | 316.1611 | 1938.10 | 84.56 | 41.84 | −74.06 |
| 372 | 226 | 62.4878 | 316.1533 | 2046.08 | 54.67 | 41.81 | −102.87 |
| 373 | 226 | 62.3103 | 316.1458 | 2248.60 | 6.96 | 41.77 | −29.00 |
| 374 | 226 | 62.1329 | 316.1379 | 2196.16 | 6.91 | 41.73 | −28.60 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 375 | 226 | 61.9557 | 316.1306 | 2045.46 | 25.87 | 41.71 | −9.62 |
| 376 | 226 | 61.7786 | 316.1233 | 1673.12 | 58.50 | 41.72 | −69.69 |
| 377 | 226 | 61.6017 | 316.1160 | 1608.50 | 20.33 | 41.74 | −38.00 |
| 378 | 226 | 61.4249 | 316.1086 | 1441.22 | 37.19 | 41.76 | −54.36 |
| 379 | 226 | 61.2482 | 316.1016 | 1529.25 | 333.94 | 41.78 | −33.62 |
| 380 | 226 | 61.0717 | 316.0945 | 1461.73 | 90.20 | 41.80 | 2.06 |
| 381 | 226 | 60.8952 | 316.0876 | 1280.34 | 45.86 | 41.84 | −63.39 |
| 382 | 226 | 60.7190 | 316.0808 | 951.46 | 82.04 | 41.90 | −58.83 |
| 383 | 226 | 60.5429 | 316.0740 | 377.14 | 68.87 | 41.96 | 124.65 |
| 384 | 226 | 60.3669 | 316.0674 | 280.74 | 161.08 | 42.02 | −41.71 |
| 385 | 226 | 60.1911 | 316.0608 | 254.48 | 86.05 | 42.08 | −43.53 |
| 386 | 226 | 60.0154 | 316.0542 | 230.95 | 71.15 | 42.14 | −122.08 |
| 318 | 227 | 72.2449 | 317.4109 | 2943.13 | 0.06 | 42.37 | −2.26 |
| 319 | 227 | 72.0613 | 317.3857 | 2927.82 | 0.84 | 42.51 | −2.17 |
| 320 | 227 | 71.8779 | 317.3613 | 2910.50 | 2.79 | 42.65 | −2.05 |
| 321 | 227 | 71.6945 | 317.3372 | 2884.82 | 1.14 | 42.79 | −2.54 |
| 322 | 227 | 71.5112 | 317.3137 | 2858.66 | 0.80 | 42.93 | −3.34 |
| 323 | 227 | 71.3280 | 317.2905 | 2831.55 | 4.80 | 43.07 | −2.66 |
| 324 | 227 | 71.1449 | 317.2678 | 2800.85 | 1.89 | 43.21 | −4.61 |
| 325 | 227 | 70.9619 | 317.2456 | 2774.95 | 1.92 | 43.34 | −5.36 |
| 326 | 227 | 70.7791 | 317.2239 | 2744.90 | 1.99 | 43.47 | −8.35 |
| 327 | 227 | 70.5962 | 317.2024 | 2720.51 | 4.31 | 43.59 | −4.86 |
| 328 | 227 | 70.4135 | 317.1816 | 2688.41 | 1.92 | 43.72 | −2.81 |
| 329 | 227 | 70.2309 | 317.1609 | 2660.34 | 3.15 | 43.84 | −5.05 |
| 330 | 227 | 70.0484 | 317.1409 | 2627.96 | 4.71 | 43.97 | −5.16 |
| 331 | 227 | 69.8660 | 317.1211 | 2597.72 | 5.19 | 44.07 | −3.92 |
| 332 | 227 | 69.6837 | 317.1016 | 2566.42 | 2.05 | 44.17 | −5.60 |
| 333 | 227 | 69.5015 | 317.0825 | 2538.22 | 68.24 | 44.26 | −6.95 |
| 334 | 227 | 69.3194 | 317.0637 | 2515.29 | 7.93 | 44.35 | −5.06 |
| 335 | 227 | 69.1374 | 317.0452 | 2498.25 | 1.69 | 44.44 | −5.16 |
| 336 | 227 | 68.9555 | 317.0271 | 2485.32 | 1.29 | 44.53 | −3.33 |
| 337 | 227 | 68.7737 | 317.0095 | 2465.74 | 1.97 | 44.57 | −4.15 |
| 338 | 227 | 68.5920 | 316.9919 | 2461.82 | 4.98 | 44.61 | −2.58 |
| 339 | 227 | 68.4104 | 316.9749 | 2458.80 | 39.04 | 44.65 | −3.95 |
| 340 | 227 | 68.2289 | 316.9580 | 2452.90 | 0.77 | 44.69 | −4.07 |
| 341 | 227 | 68.0475 | 316.9414 | 2456.14 | 4.13 | 44.73 | −3.39 |
| 342 | 227 | 67.8663 | 316.9250 | 2462.18 | 2.79 | 44.73 | −2.28 |
| 343 | 227 | 67.6852 | 316.9089 | 2469.00 | 3.00 | 44.71 | −2.41 |
| 344 | 227 | 67.5041 | 316.8933 | 2481.31 | 1.01 | 44.69 | −3.91 |
| 345 | 227 | 67.3232 | 316.8777 | 2492.94 | 0.63 | 44.67 | −2.19 |
| 346 | 227 | 67.1424 | 316.8625 | 2500.18 | 4.86 | 44.65 | −1.41 |
| 347 | 227 | 66.9617 | 316.8474 | 2512.43 | 1.31 | 44.61 | −2.42 |
| 348 | 227 | 66.7811 | 316.8328 | 2506.02 | 1.20 | 44.54 | −1.07 |
| 349 | 227 | 66.6006 | 316.8181 | 2490.09 | 0.38 | 44.46 | −0.23 |
| 350 | 227 | 66.4203 | 316.8040 | 2455.96 | 4.84 | 44.38 | −3.00 |
| 351 | 227 | 66.2401 | 316.7898 | 2441.22 | 6.01 | 44.31 | −2.30 |
| 352 | 227 | 66.0600 | 316.7759 | 2409.21 | 1.53 | 44.23 | −7.22 |
| 353 | 227 | 65.8799 | 316.7622 | 2375.45 | 8.08 | 44.13 | −0.42 |
| 354 | 227 | 65.7001 | 316.7488 | 2322.96 | 6.01 | 44.02 | −5.29 |
| 355 | 227 | 65.5203 | 316.7356 | 2308.13 | 2.26 | 43.91 | −10.54 |
| 356 | 227 | 65.3407 | 316.7227 | 2308.65 | 2.25 | 43.80 | −9.87 |
| 357 | 227 | 65.1612 | 316.7097 | 2339.84 | 1.40 | 43.69 | −8.02 |
| 358 | 227 | 64.9818 | 316.6970 | 2419.31 | 7.94 | 43.58 | −13.80 |
| 359 | 227 | 64.8025 | 316.6846 | 2474.83 | 1.86 | 43.46 | −9.68 |
| 360 | 227 | 64.6234 | 316.6724 | 2529.69 | 8.51 | 43.35 | −6.86 |
| 361 | 227 | 64.4444 | 316.6602 | 2548.59 | 3.78 | 43.24 | −14.92 |
| 362 | 227 | 64.2655 | 316.6482 | 2590.00 | 2.71 | 43.12 | −6.90 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 363 | 227 | 64.0867 | 316.6365 | 2643.96 | 3.10 | 43.01 | −10.48 |
| 364 | 227 | 63.9081 | 316.6248 | 2640.11 | 19.19 | 42.91 | −5.60 |
| 365 | 227 | 63.7295 | 316.6135 | 2627.20 | 15.52 | 42.83 | −15.09 |
| 366 | 227 | 63.5511 | 316.6021 | 2523.94 | 14.41 | 42.74 | −33.30 |
| 367 | 227 | 63.3729 | 316.5911 | 2406.87 | 23.61 | 42.66 | −63.29 |
| 368 | 227 | 63.1948 | 316.5801 | 2258.12 | 47.80 | 42.58 | −44.22 |
| 369 | 227 | 63.0168 | 316.5693 | 1703.96 | 52.60 | 42.49 | 25.82 |
| 370 | 227 | 62.8389 | 316.5586 | 1258.86 | 58.37 | 42.46 | −166.87 |
| 371 | 227 | 62.6612 | 316.5481 | 1408.87 | 31.83 | 42.42 | −103.20 |
| 372 | 227 | 62.4836 | 316.5376 | 1620.54 | 21.74 | 42.39 | 18.78 |
| 373 | 227 | 62.3061 | 316.5273 | 1717.84 | 32.24 | 42.36 | −111.45 |
| 374 | 227 | 62.1288 | 316.5173 | 1634.95 | 6.02 | 42.33 | −56.63 |
| 375 | 227 | 61.9516 | 316.5073 | 1636.33 | 13.65 | 42.31 | −90.28 |
| 376 | 227 | 61.7746 | 316.4976 | 1362.89 | 77.83 | 42.34 | −39.51 |
| 377 | 227 | 61.5976 | 316.4878 | 1032.14 | 63.51 | 42.36 | −70.68 |
| 378 | 227 | 61.4209 | 316.4783 | 1185.92 | 26.39 | 42.39 | −41.81 |
| 379 | 227 | 61.2442 | 316.4687 | 1156.50 | 60.69 | 42.41 | −102.57 |
| 380 | 227 | 61.0677 | 316.4592 | 1078.19 | 19.17 | 42.43 | −32.09 |
| 381 | 227 | 60.8913 | 316.4502 | 978.76 | 43.98 | 42.48 | 2.93 |
| 382 | 227 | 60.7151 | 316.4409 | 607.64 | 144.40 | 42.55 | −89.09 |
| 383 | 227 | 60.5390 | 316.4319 | 121.37 | 72.90 | 42.61 | −163.67 |
| 384 | 227 | 60.3631 | 316.4231 | 315.03 | 61.77 | 42.68 | −179.62 |
| 385 | 227 | 60.1873 | 316.4143 | 369.24 | 79.73 | 42.74 | −123.38 |
| 386 | 227 | 60.0116 | 316.4055 | 202.56 | 45.48 | 42.80 | −115.99 |
| 318 | 228 | 72.2362 | 318.0127 | 2984.19 | 0.15 | 42.91 | −2.13 |
| 319 | 228 | 72.0527 | 317.9814 | 2971.72 | 0.38 | 43.06 | −1.95 |
| 320 | 228 | 71.8694 | 317.9507 | 2954.68 | 0.74 | 43.20 | −1.88 |
| 321 | 228 | 71.6861 | 317.9207 | 2930.15 | 1.25 | 43.35 | −3.27 |
| 322 | 228 | 71.5029 | 317.8911 | 2907.81 | 1.25 | 43.49 | −2.24 |
| 323 | 228 | 71.3198 | 317.8623 | 2878.98 | 3.22 | 43.63 | −4.28 |
| 324 | 228 | 71.1368 | 317.8340 | 2853.76 | 2.85 | 43.77 | −2.96 |
| 325 | 228 | 70.9539 | 317.8062 | 2829.53 | 1.78 | 43.91 | −3.92 |
| 326 | 228 | 70.7711 | 317.7791 | 2803.04 | 3.37 | 44.04 | −4.38 |
| 327 | 228 | 70.5883 | 317.7524 | 2782.41 | 1.15 | 44.17 | −2.94 |
| 328 | 228 | 70.4057 | 317.7261 | 2748.52 | 5.12 | 44.29 | −4.14 |
| 329 | 228 | 70.2232 | 317.7004 | 2724.48 | 3.87 | 44.42 | −3.37 |
| 330 | 228 | 70.0407 | 317.6753 | 2694.59 | 1.73 | 44.55 | −5.29 |
| 331 | 228 | 69.8584 | 317.6506 | 2661.19 | 2.75 | 44.64 | −3.09 |
| 332 | 228 | 69.6762 | 317.6262 | 2627.88 | 4.14 | 44.74 | −7.69 |
| 333 | 228 | 69.4940 | 317.6025 | 2607.99 | 48.06 | 44.83 | −1.86 |
| 334 | 228 | 69.3120 | 317.5791 | 2585.05 | 4.26 | 44.92 | −3.91 |
| 335 | 228 | 69.1301 | 317.5559 | 2557.39 | 40.06 | 45.01 | −6.56 |
| 336 | 228 | 68.9482 | 317.5334 | 2546.29 | 4.13 | 45.09 | −5.23 |
| 337 | 228 | 68.7665 | 317.5112 | 2531.73 | 2.17 | 45.13 | −3.95 |
| 338 | 228 | 68.5849 | 317.4895 | 2521.09 | 3.98 | 45.17 | −2.46 |
| 339 | 228 | 68.4034 | 317.4680 | 2518.96 | 1.21 | 45.20 | −3.09 |
| 340 | 228 | 68.2219 | 317.4470 | 2514.42 | 0.62 | 45.24 | −3.29 |
| 341 | 228 | 68.0406 | 317.4263 | 2514.90 | 1.79 | 45.28 | −3.06 |
| 342 | 228 | 67.8595 | 317.4058 | 2517.77 | 0.60 | 45.27 | −2.77 |
| 343 | 228 | 67.6784 | 317.3857 | 2521.67 | 1.23 | 45.25 | −1.84 |
| 344 | 228 | 67.4974 | 317.3662 | 2527.96 | 2.67 | 45.23 | −2.13 |
| 345 | 228 | 67.3165 | 317.3467 | 2535.57 | 1.48 | 45.20 | −0.69 |
| 346 | 228 | 67.1358 | 317.3276 | 2532.85 | 4.58 | 45.18 | −2.08 |
| 347 | 228 | 66.9551 | 317.3088 | 2515.79 | 2.18 | 45.14 | −0.97 |
| 348 | 228 | 66.7746 | 317.2905 | 2483.45 | 0.94 | 45.07 | −2.55 |
| 349 | 228 | 66.5942 | 317.2722 | 2443.06 | 1.40 | 44.99 | −3.04 |
| 350 | 228 | 66.4139 | 317.2544 | 2399.69 | 4.82 | 44.91 | −3.96 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 351 | 228 | 66.2337 | 317.2368 | 2351.33 | 11.63 | 44.83 | −6.90 |
| 352 | 228 | 66.0537 | 317.2195 | 2306.72 | 5.47 | 44.75 | −11.99 |
| 353 | 228 | 65.8737 | 317.2024 | 2273.79 | 39.33 | 44.65 | −7.55 |
| 354 | 228 | 65.6939 | 317.1858 | 2224.82 | 3.08 | 44.54 | −11.16 |
| 355 | 228 | 65.5142 | 317.1692 | 2166.03 | 2.00 | 44.43 | −16.31 |
| 356 | 228 | 65.3346 | 317.1528 | 2159.19 | 4.96 | 44.32 | −5.07 |
| 357 | 228 | 65.1551 | 317.1367 | 2199.65 | 6.77 | 44.21 | −1.96 |
| 358 | 228 | 64.9758 | 317.1211 | 2305.61 | 7.45 | 44.10 | −14.05 |
| 359 | 228 | 64.7966 | 317.1055 | 2355.60 | 12.92 | 43.99 | −16.12 |
| 360 | 228 | 64.6175 | 317.0901 | 2353.51 | 4.29 | 43.88 | −11.83 |
| 361 | 228 | 64.4385 | 317.0750 | 2386.64 | 9.62 | 43.77 | −20.12 |
| 362 | 228 | 64.2597 | 317.0601 | 2375.40 | 5.30 | 43.66 | −7.63 |
| 363 | 228 | 64.0809 | 317.0452 | 2448.92 | 82.13 | 43.55 | −2.73 |
| 364 | 228 | 63.9023 | 317.0308 | 2402.64 | 17.93 | 43.45 | −11.75 |
| 365 | 228 | 63.7239 | 317.0166 | 2706.91 | 29.19 | 43.38 | −154.09 |
| 366 | 228 | 63.5455 | 317.0024 | 2277.87 | 61.25 | 43.30 | −109.91 |
| 367 | 228 | 63.3673 | 316.9885 | 1995.94 | 99.86 | 43.22 | −96.84 |
| 368 | 228 | 63.1893 | 316.9749 | 1479.09 | 48.51 | 43.14 | −64.77 |
| 369 | 228 | 63.0113 | 316.9612 | 925.09 | 83.87 | 43.06 | −136.52 |
| 370 | 228 | 62.8335 | 316.9480 | 617.34 | 21.30 | 43.03 | −100.35 |
| 371 | 228 | 62.6558 | 316.9348 | 514.04 | 13.90 | 43.01 | −609.44 |
| 372 | 228 | 62.4782 | 316.9219 | 1188.87 | 34.01 | 42.98 | 50.30 |
| 373 | 228 | 62.3008 | 316.9089 | 1243.11 | 91.81 | 42.95 | −95.88 |
| 374 | 228 | 62.1235 | 316.8965 | 1152.55 | 12.94 | 42.93 | −58.41 |
| 375 | 228 | 61.9464 | 316.8840 | 1043.34 | 7.07 | 42.92 | −63.77 |
| 376 | 228 | 61.7694 | 316.8716 | 851.67 | 21.66 | 42.95 | −53.06 |
| 377 | 228 | 61.5925 | 316.8594 | 677.19 | 29.23 | 42.98 | −537.93 |
| 378 | 228 | 61.4157 | 316.8474 | 367.79 | 25.82 | 43.01 | −48.40 |
| 379 | 228 | 61.2391 | 316.8357 | 352.25 | 49.77 | 43.04 | −41.07 |
| 380 | 228 | 61.0627 | 316.8240 | 324.72 | 13.95 | 43.07 | −21.40 |
| 381 | 228 | 60.8863 | 316.8125 | 276.10 | 29.20 | 43.12 | 19.43 |
| 382 | 228 | 60.7101 | 316.8010 | 251.93 | 84.74 | 43.19 | −63.54 |
| 383 | 228 | 60.5341 | 316.7898 | −78.04 | 69.50 | 43.26 | −128.72 |
| 318 | 229 | 72.2256 | 318.6138 | 3024.75 | 0.12 | 43.43 | −2.03 |
| 319 | 229 | 72.0422 | 318.5762 | 3012.84 | 0.39 | 43.59 | −1.46 |
| 320 | 229 | 71.8590 | 318.5396 | 2994.61 | 1.43 | 43.74 | −3.28 |
| 321 | 229 | 71.6758 | 318.5034 | 2977.72 | 0.88 | 43.89 | −1.90 |
| 322 | 229 | 71.4927 | 318.4680 | 2951.98 | 2.08 | 44.04 | −2.39 |
| 323 | 229 | 71.3097 | 318.4336 | 2928.81 | 2.26 | 44.18 | −4.00 |
| 324 | 229 | 71.1268 | 318.3997 | 2899.90 | 1.35 | 44.33 | −4.94 |
| 325 | 229 | 70.9440 | 318.3665 | 2880.33 | 2.48 | 44.47 | −2.02 |
| 326 | 229 | 70.7613 | 318.3337 | 2854.36 | 4.11 | 44.60 | −2.39 |
| 327 | 229 | 70.5787 | 318.3018 | 2835.11 | 14.33 | 44.73 | −1.50 |
| 328 | 229 | 70.3961 | 318.2703 | 2804.99 | 2.59 | 44.86 | −4.31 |
| 329 | 229 | 70.2137 | 318.2395 | 2774.44 | 22.59 | 44.99 | −7.33 |
| 330 | 229 | 70.0314 | 318.2095 | 2747.24 | 5.53 | 45.12 | −6.22 |
| 331 | 229 | 69.8491 | 318.1797 | 2714.83 | 1.30 | 45.21 | −4.67 |
| 332 | 229 | 69.6670 | 318.1506 | 2700.16 | 4.01 | 45.30 | −2.91 |
| 333 | 229 | 69.4849 | 318.1221 | 2668.22 | 3.12 | 45.40 | −5.27 |
| 334 | 229 | 69.3030 | 318.0940 | 2646.50 | 1.47 | 45.49 | −4.35 |
| 335 | 229 | 69.1211 | 318.0664 | 2631.30 | 8.93 | 45.58 | −2.85 |
| 336 | 229 | 68.9394 | 318.0393 | 2609.45 | 6.86 | 45.65 | −4.57 |
| 337 | 229 | 68.7577 | 318.0127 | 2591.52 | 1.50 | 45.69 | −3.91 |
| 338 | 229 | 68.5762 | 317.9866 | 2581.18 | 1.46 | 45.72 | −3.45 |
| 339 | 229 | 68.3947 | 317.9607 | 2576.87 | 1.03 | 45.76 | −2.75 |
| 340 | 229 | 68.2134 | 317.9355 | 2574.29 | 3.34 | 45.79 | −0.89 |
| 341 | 229 | 68.0322 | 317.9106 | 2569.07 | 0.58 | 45.83 | −2.38 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 342 | 229 | 67.8511 | 317.8862 | 2565.78 | 1.35 | 45.82 | −1.35 |
| 343 | 229 | 67.6701 | 317.8623 | 2565.59 | 1.72 | 45.79 | −0.92 |
| 344 | 229 | 67.4892 | 317.8386 | 2549.20 | 1.74 | 45.76 | −0.58 |
| 345 | 229 | 67.3084 | 317.8154 | 2528.26 | 0.37 | 45.74 | −2.30 |
| 346 | 229 | 67.1277 | 317.7925 | 2502.47 | 1.77 | 45.71 | −3.33 |
| 347 | 229 | 66.9471 | 317.7700 | 2468.73 | 2.09 | 45.67 | −3.80 |
| 348 | 229 | 66.7667 | 317.7480 | 2432.42 | 1.47 | 45.59 | −3.36 |
| 349 | 229 | 66.5863 | 317.7261 | 2378.04 | 35.35 | 45.51 | −2.48 |
| 350 | 229 | 66.4061 | 317.7048 | 2330.06 | 1.12 | 45.43 | −6.17 |
| 351 | 229 | 66.2260 | 317.6836 | 2275.11 | 4.81 | 45.35 | −11.79 |
| 352 | 229 | 66.0460 | 317.6628 | 2228.04 | 3.57 | 45.28 | −8.34 |
| 353 | 229 | 65.8661 | 317.6423 | 2158.05 | 11.01 | 45.17 | −11.31 |
| 354 | 229 | 65.6864 | 317.6223 | 2085.75 | 8.11 | 45.06 | −19.54 |
| 355 | 229 | 65.5067 | 317.6025 | 2013.42 | 7.09 | 44.95 | −27.15 |
| 356 | 229 | 65.3272 | 317.5830 | 1992.65 | 9.50 | 44.84 | −19.81 |
| 357 | 229 | 65.1478 | 317.5637 | 2054.12 | 72.92 | 44.73 | −32.46 |
| 358 | 229 | 64.9685 | 317.5447 | 2192.87 | 44.89 | 44.63 | −32.08 |
| 359 | 229 | 64.7893 | 317.5259 | 2054.62 | 40.89 | 44.52 | −46.73 |
| 360 | 229 | 64.6103 | 317.5076 | 2024.67 | 7.94 | 44.41 | −36.39 |
| 361 | 229 | 64.4314 | 317.4895 | 2141.29 | 16.55 | 44.30 | −38.39 |
| 362 | 229 | 64.2526 | 317.4714 | 2225.00 | 15.81 | 44.19 | −8.55 |
| 363 | 229 | 64.0739 | 317.4539 | 2225.63 | 28.24 | 44.09 | −6.63 |
| 364 | 229 | 63.8954 | 317.4365 | 2063.55 | 24.55 | 44.00 | −19.69 |
| 365 | 229 | 63.7170 | 317.4194 | 1932.70 | 61.18 | 43.93 | −136.74 |
| 366 | 229 | 63.5387 | 317.4026 | 1490.76 | 62.26 | 43.85 | −84.34 |
| 367 | 229 | 63.3605 | 317.3857 | 847.25 | 53.70 | 43.78 | 37.72 |
| 368 | 229 | 63.1825 | 317.3694 | 477.31 | 29.32 | 43.70 | −12.75 |
| 369 | 229 | 63.0046 | 317.3533 | 484.81 | 56.72 | 43.63 | −175.39 |
| 370 | 229 | 62.8268 | 317.3372 | 646.67 | 12.62 | 43.61 | 746.04 |
| 371 | 229 | 62.6492 | 317.3213 | 728.86 | 27.96 | 43.59 | −204.60 |
| 372 | 229 | 62.4717 | 317.3059 | 686.72 | 11.93 | 43.57 | 826.95 |
| 373 | 229 | 62.2943 | 317.2905 | 887.08 | 32.05 | 43.55 | 99.24 |
| 374 | 229 | 62.1171 | 317.2754 | 750.53 | 168.84 | 43.53 | −92.49 |
| 375 | 229 | 61.9400 | 317.2605 | 674.12 | 27.68 | 43.53 | −249.37 |
| 376 | 229 | 61.7630 | 317.2456 | 246.92 | 58.09 | 43.56 | −172.64 |
| 377 | 229 | 61.5862 | 317.2310 | 203.85 | 11.30 | 43.60 | −49.06 |
| 378 | 229 | 61.4095 | 317.2166 | 442.39 | 146.54 | 43.63 | −75.35 |
| 318 | 230 | 72.2130 | 319.2141 | 3062.65 | 0.12 | 43.95 | −1.37 |
| 319 | 230 | 72.0298 | 319.1704 | 3049.54 | 0.82 | 44.11 | −1.97 |
| 320 | 230 | 71.8467 | 319.1274 | 3035.39 | 1.96 | 44.27 | −1.32 |
| 321 | 230 | 71.6637 | 319.0854 | 3014.42 | 0.34 | 44.42 | −1.43 |
| 322 | 230 | 71.4807 | 319.0444 | 2994.65 | 0.92 | 44.58 | −2.40 |
| 323 | 230 | 71.2979 | 319.0042 | 2970.78 | 4.68 | 44.73 | −2.70 |
| 324 | 230 | 71.1151 | 318.9646 | 2950.16 | 1.64 | 44.89 | −1.77 |
| 325 | 230 | 70.9324 | 318.9258 | 2924.43 | 2.65 | 45.03 | −6.14 |
| 326 | 230 | 70.7498 | 318.8877 | 2908.90 | 0.64 | 45.16 | −0.81 |
| 327 | 230 | 70.5673 | 318.8506 | 2877.96 | 1.75 | 45.29 | −2.57 |
| 328 | 230 | 70.3849 | 318.8140 | 2858.12 | 2.46 | 45.42 | −3.68 |
| 329 | 230 | 70.2025 | 318.7781 | 2830.45 | 0.88 | 45.55 | −3.43 |
| 330 | 230 | 70.0203 | 318.7429 | 2806.98 | 1.67 | 45.68 | −2.17 |
| 331 | 230 | 69.8382 | 318.7083 | 2781.63 | 7.10 | 45.78 | −2.72 |
| 332 | 230 | 69.6561 | 318.6743 | 2753.84 | 2.14 | 45.87 | −2.74 |
| 333 | 230 | 69.4742 | 318.6411 | 2726.47 | 0.95 | 45.96 | −3.74 |
| 334 | 230 | 69.2923 | 318.6084 | 2709.37 | 8.64 | 46.05 | −3.97 |
| 335 | 230 | 69.1106 | 318.5762 | 2689.30 | 1.07 | 46.14 | −2.98 |
| 336 | 230 | 68.9289 | 318.5447 | 2673.14 | 5.57 | 46.21 | −1.46 |
| 337 | 230 | 68.7474 | 318.5137 | 2647.19 | 3.22 | 46.24 | −2.82 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 338 | 230 | 68.5659 | 318.4832 | 2637.81 | 1.02 | 46.27 | −1.10 |
| 339 | 230 | 68.3846 | 318.4531 | 2628.44 | 3.96 | 46.31 | −1.56 |
| 340 | 230 | 68.2034 | 318.4238 | 2622.73 | 0.92 | 46.34 | −2.23 |
| 341 | 230 | 68.0222 | 318.3948 | 2613.78 | 0.99 | 46.38 | −0.96 |
| 342 | 230 | 67.8412 | 318.3665 | 2598.14 | 0.94 | 46.36 | −0.46 |
| 343 | 230 | 67.6603 | 318.3384 | 2563.28 | 0.67 | 46.33 | −2.40 |
| 344 | 230 | 67.4794 | 318.3108 | 2524.45 | 0.57 | 46.30 | −2.32 |
| 345 | 230 | 67.2988 | 318.2837 | 2485.03 | 2.50 | 46.27 | −4.28 |
| 346 | 230 | 67.1181 | 318.2571 | 2451.17 | 5.84 | 46.25 | −3.54 |
| 347 | 230 | 66.9377 | 318.2310 | 2413.46 | 2.84 | 46.20 | −5.64 |
| 348 | 230 | 66.7573 | 318.2051 | 2376.19 | 2.18 | 46.12 | −4.86 |
| 349 | 230 | 66.5770 | 318.1797 | 2324.46 | 4.50 | 46.04 | −4.20 |
| 350 | 230 | 66.3969 | 318.1548 | 2228.73 | 3.62 | 45.96 | −21.01 |
| 351 | 230 | 66.2168 | 318.1301 | 2186.53 | 5.29 | 45.88 | −9.21 |
| 352 | 230 | 66.0369 | 318.1060 | 2109.49 | 16.74 | 45.80 | −12.91 |
| 353 | 230 | 65.8571 | 318.0820 | 2035.68 | 8.07 | 45.69 | −5.01 |
| 354 | 230 | 65.6774 | 318.0586 | 1940.68 | 39.29 | 45.59 | −13.00 |
| 355 | 230 | 65.4979 | 318.0354 | 1771.89 | 54.49 | 45.48 | −5.42 |
| 356 | 230 | 65.3184 | 318.0127 | 1688.02 | 10.21 | 45.37 | −34.99 |
| 357 | 230 | 65.1391 | 317.9902 | 1634.72 | 62.99 | 45.26 | −210.68 |
| 358 | 230 | 64.9599 | 317.9680 | 1909.22 | 18.36 | 45.15 | 9.90 |
| 359 | 230 | 64.7808 | 317.9463 | 1978.47 | 64.05 | 45.05 | 57.41 |
| 360 | 230 | 64.6018 | 317.9248 | 1948.70 | 13.17 | 44.94 | −63.62 |
| 361 | 230 | 64.4230 | 317.9038 | 1829.19 | 58.39 | 44.84 | −141.06 |
| 362 | 230 | 64.2442 | 317.8828 | 1856.19 | 68.44 | 44.73 | 13.68 |
| 363 | 230 | 64.0656 | 317.8623 | 1740.83 | 55.22 | 44.63 | −24.62 |
| 364 | 230 | 63.8872 | 317.8420 | 1553.30 | 64.80 | 44.55 | −153.61 |
| 365 | 230 | 63.7088 | 317.8220 | 1134.92 | 86.86 | 44.48 | −97.60 |
| 366 | 230 | 63.5306 | 317.8022 | 740.79 | 57.78 | 44.41 | −63.53 |
| 367 | 230 | 63.3525 | 317.7830 | 394.34 | 92.61 | 44.34 | 234.84 |
| 368 | 230 | 63.1745 | 317.7637 | −50.65 | 62.38 | 44.27 | −49.15 |
| 371 | 230 | 62.6414 | 317.7078 | 590.15 | 18.27 | 44.17 | −226.97 |
| 375 | 230 | 61.9324 | 317.6367 | 354.90 | 27.95 | 44.13 | 10.88 |
| 376 | 230 | 61.7555 | 317.6194 | −97.01 | 13.15 | 44.17 | −32.77 |
| 318 | 231 | 72.1986 | 319.8135 | 3100.73 | 0.11 | 44.45 | −1.20 |
| 319 | 231 | 72.0155 | 319.7634 | 3085.40 | 0.61 | 44.62 | −1.35 |
| 320 | 231 | 71.8326 | 319.7146 | 3070.18 | 1.75 | 44.79 | −1.59 |
| 321 | 231 | 71.6497 | 319.6667 | 3051.81 | 2.33 | 44.95 | −0.93 |
| 322 | 231 | 71.4669 | 319.6199 | 3031.98 | 0.67 | 45.11 | −1.84 |
| 323 | 231 | 71.2841 | 319.5737 | 3011.11 | 1.09 | 45.27 | −2.00 |
| 324 | 231 | 71.1015 | 319.5288 | 2991.39 | 13.76 | 45.43 | −1.36 |
| 325 | 231 | 70.9190 | 319.4844 | 2970.10 | 0.71 | 45.57 | −1.61 |
| 326 | 231 | 70.7365 | 319.4412 | 2954.37 | 1.29 | 45.71 | −2.70 |
| 327 | 231 | 70.5541 | 319.3987 | 2928.19 | 4.29 | 45.84 | −3.83 |
| 328 | 231 | 70.3718 | 319.3569 | 2903.42 | 5.98 | 45.98 | −2.79 |
| 329 | 231 | 70.1896 | 319.3159 | 2881.93 | 2.64 | 46.11 | −1.55 |
| 330 | 231 | 70.0075 | 319.2756 | 2855.71 | 1.53 | 46.24 | −4.44 |
| 331 | 231 | 69.8255 | 319.2363 | 2830.32 | 1.76 | 46.33 | −0.14 |
| 332 | 231 | 69.6436 | 319.1975 | 2808.18 | 1.13 | 46.42 | −2.69 |
| 333 | 231 | 69.4618 | 319.1594 | 2778.67 | 3.16 | 46.52 | −3.22 |
| 334 | 231 | 69.2800 | 319.1221 | 2760.73 | 3.51 | 46.61 | −1.89 |
| 335 | 231 | 69.0984 | 319.0854 | 2739.73 | 2.96 | 46.70 | −4.11 |
| 336 | 231 | 68.9169 | 319.0496 | 2724.00 | 6.49 | 46.76 | −2.45 |
| 337 | 231 | 68.7354 | 319.0142 | 2702.66 | 1.22 | 46.79 | −3.17 |
| 338 | 231 | 68.5541 | 318.9792 | 2687.80 | 3.44 | 46.83 | −1.63 |
| 339 | 231 | 68.3729 | 318.9451 | 2674.56 | 2.71 | 46.86 | −2.65 |
| 340 | 231 | 68.1917 | 318.9114 | 2661.96 | 1.03 | 46.89 | −0.99 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 341 | 231 | 68.0107 | 318.8784 | 2639.99 | 0.71 | 46.92 | −2.03 |
| 342 | 231 | 67.8298 | 318.8459 | 2599.05 | 1.51 | 46.90 | −1.04 |
| 343 | 231 | 67.6490 | 318.8140 | 2539.70 | 1.37 | 46.87 | −6.59 |
| 344 | 231 | 67.4682 | 318.7825 | 2482.52 | 1.24 | 46.84 | −5.66 |
| 345 | 231 | 67.2876 | 318.7517 | 2434.92 | 3.57 | 46.81 | −2.76 |
| 346 | 231 | 67.1071 | 318.7212 | 2390.21 | 1.10 | 46.78 | −1.24 |
| 347 | 231 | 66.9268 | 318.6912 | 2342.23 | 3.18 | 46.73 | −8.34 |
| 348 | 231 | 66.7465 | 318.6619 | 2305.54 | 3.57 | 46.65 | −8.78 |
| 349 | 231 | 66.5663 | 318.6328 | 2259.05 | 2.59 | 46.57 | −1.84 |
| 350 | 231 | 66.3862 | 318.6042 | 2179.70 | 6.76 | 46.49 | −13.12 |
| 351 | 231 | 66.2063 | 318.5762 | 2066.50 | 13.02 | 46.41 | −25.86 |
| 352 | 231 | 66.0265 | 318.5486 | 2003.05 | 1.81 | 46.32 | −19.45 |
| 353 | 231 | 65.8468 | 318.5212 | 1927.11 | 18.95 | 46.22 | −10.95 |
| 354 | 231 | 65.6672 | 318.4946 | 1783.59 | 29.82 | 46.11 | −14.61 |
| 355 | 231 | 65.4877 | 318.4680 | 1568.32 | 47.30 | 46.00 | −63.99 |
| 356 | 231 | 65.3083 | 318.4421 | 1365.68 | 48.04 | 45.90 | −58.99 |
| 357 | 231 | 65.1290 | 318.4165 | 1264.63 | 15.41 | 45.79 | −121.03 |
| 358 | 231 | 64.9499 | 318.3911 | 1458.27 | 49.36 | 45.68 | −61.20 |
| 359 | 231 | 64.7709 | 318.3665 | 1493.24 | 21.20 | 45.58 | −72.22 |
| 360 | 231 | 64.5920 | 318.3418 | 1047.55 | 28.30 | 45.48 | −284.42 |
| 361 | 231 | 64.4132 | 318.3176 | 1249.13 | 31.98 | 45.38 | −90.90 |
| 362 | 231 | 64.2346 | 318.2939 | 1167.88 | 43.52 | 45.27 | 196.13 |
| 363 | 231 | 64.0561 | 318.2703 | 1043.58 | 67.37 | 45.17 | 88.63 |
| 364 | 231 | 63.8777 | 318.2473 | 903.12 | 55.12 | 45.10 | −77.72 |
| 365 | 231 | 63.6994 | 318.2244 | 497.95 | 99.23 | 45.03 | −160.62 |
| 366 | 231 | 63.5212 | 318.2019 | 276.60 | 80.24 | 44.97 | −122.85 |
| 318 | 232 | 72.1822 | 320.4119 | 3132.24 | 0.11 | 44.95 | −1.48 |
| 319 | 232 | 71.9993 | 320.3557 | 3119.91 | 2.82 | 45.13 | −1.18 |
| 320 | 232 | 71.8165 | 320.3008 | 3102.89 | 0.54 | 45.30 | −1.35 |
| 321 | 232 | 71.6338 | 320.2471 | 3088.21 | 1.10 | 45.47 | −1.07 |
| 322 | 232 | 71.4512 | 320.1943 | 3069.94 | 2.23 | 45.63 | −1.23 |
| 323 | 232 | 71.2686 | 320.1426 | 3049.95 | 0.74 | 45.80 | −1.26 |
| 324 | 232 | 71.0862 | 320.0920 | 3028.03 | 0.91 | 45.96 | −1.97 |
| 325 | 232 | 70.9037 | 320.0422 | 3011.15 | 0.43 | 46.11 | −1.26 |
| 326 | 232 | 70.7214 | 319.9937 | 2991.58 | 1.77 | 46.25 | −2.49 |
| 327 | 232 | 70.5392 | 319.9458 | 2972.26 | 4.13 | 46.39 | −1.46 |
| 328 | 232 | 70.3571 | 319.8989 | 2950.05 | 2.32 | 46.53 | −0.97 |
| 329 | 232 | 70.1750 | 319.8530 | 2925.07 | 1.29 | 46.66 | −1.68 |
| 330 | 232 | 69.9931 | 319.8079 | 2902.09 | 1.55 | 46.80 | −2.99 |
| 331 | 232 | 69.8112 | 319.7634 | 2880.18 | 6.11 | 46.89 | −1.86 |
| 332 | 232 | 69.6294 | 319.7200 | 2856.67 | 3.93 | 46.98 | −1.42 |
| 333 | 232 | 69.4477 | 319.6772 | 2830.08 | 0.98 | 47.07 | −2.21 |
| 334 | 232 | 69.2661 | 319.6353 | 2812.82 | 4.49 | 47.16 | −2.97 |
| 335 | 232 | 69.0846 | 319.5942 | 2791.39 | 4.96 | 47.25 | −4.63 |
| 336 | 232 | 68.9032 | 319.5537 | 2774.35 | 0.78 | 47.31 | −2.24 |
| 337 | 232 | 68.7219 | 319.5139 | 2755.90 | 2.70 | 47.34 | −1.69 |
| 338 | 232 | 68.5407 | 319.4749 | 2731.17 | 1.37 | 47.37 | −2.43 |
| 339 | 232 | 68.3596 | 319.4363 | 2710.86 | 0.45 | 47.41 | −0.97 |
| 340 | 232 | 68.1786 | 319.3987 | 2679.76 | 1.08 | 47.44 | −2.78 |
| 341 | 232 | 67.9977 | 319.3616 | 2635.30 | 1.16 | 47.47 | −2.91 |
| 342 | 232 | 67.8169 | 319.3250 | 2581.08 | 5.21 | 47.44 | −5.39 |
| 343 | 232 | 67.6362 | 319.2891 | 2508.92 | 1.54 | 47.41 | −8.54 |
| 344 | 232 | 67.4556 | 319.2537 | 2438.19 | 3.89 | 47.38 | −7.45 |
| 345 | 232 | 67.2751 | 319.2190 | 2377.40 | 1.13 | 47.35 | −6.51 |
| 346 | 232 | 67.0947 | 319.1848 | 2316.11 | 2.11 | 47.31 | −6.24 |
| 347 | 232 | 66.9144 | 319.1511 | 2264.67 | 1.93 | 47.26 | −7.25 |
| 348 | 232 | 66.7342 | 319.1182 | 2215.53 | 5.67 | 47.18 | −13.38 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 349 | 232 | 66.5542 | 319.0854 | 2184.28 | 2.10 | 47.10 | −6.02 |
| 350 | 232 | 66.3742 | 319.0535 | 2119.29 | 2.91 | 47.01 | −9.74 |
| 351 | 232 | 66.1944 | 319.0220 | 2000.13 | 25.95 | 46.93 | −29.21 |
| 352 | 232 | 66.0146 | 318.9907 | 1892.40 | 9.49 | 46.85 | −23.24 |
| 353 | 232 | 65.8350 | 318.9602 | 1806.48 | 13.72 | 46.75 | −11.99 |
| 354 | 232 | 65.6555 | 318.9299 | 1625.23 | 5.14 | 46.64 | −53.77 |
| 355 | 232 | 65.4761 | 318.9004 | 1507.59 | 11.26 | 46.53 | −85.49 |
| 356 | 232 | 65.2968 | 318.8711 | 1224.57 | 40.73 | 46.42 | −13.36 |
| 357 | 232 | 65.1177 | 318.8423 | 1051.54 | 24.87 | 46.32 | −62.73 |
| 358 | 232 | 64.9386 | 318.8140 | 1349.04 | 21.21 | 46.21 | −59.03 |
| 359 | 232 | 64.7597 | 318.7859 | 687.59 | 46.97 | 46.12 | −70.09 |
| 360 | 232 | 64.5809 | 318.7585 | 580.83 | 27.28 | 46.02 | −45.99 |
| 361 | 232 | 64.4022 | 318.7312 | 476.51 | 128.07 | 45.92 | −0.95 |
| 362 | 232 | 64.2237 | 318.7046 | 213.85 | 155.53 | 45.82 | −67.49 |
| 364 | 232 | 63.8669 | 318.6521 | 188.00 | 57.35 | 45.65 | 194.43 |
| 365 | 232 | 63.6887 | 318.6265 | 480.33 | 136.31 | 45.59 | 101.16 |
| 366 | 232 | 63.5107 | 318.6011 | 258.68 | 36.52 | 45.53 | 51.97 |
| 318 | 233 | 72.1639 | 321.0088 | 3162.39 | 0.24 | 45.44 | −1.00 |
| 319 | 233 | 71.9812 | 320.9468 | 3149.29 | 0.74 | 45.63 | −0.90 |
| 320 | 233 | 71.7986 | 320.8860 | 3134.22 | 4.20 | 45.80 | −1.29 |
| 321 | 233 | 71.6161 | 320.8262 | 3120.42 | 0.80 | 45.98 | −1.24 |
| 322 | 233 | 71.4337 | 320.7678 | 3101.26 | 2.01 | 46.15 | −1.50 |
| 323 | 233 | 71.2513 | 320.7104 | 3081.79 | 3.20 | 46.32 | −1.80 |
| 324 | 233 | 71.0690 | 320.6543 | 3065.49 | 1.74 | 46.49 | −1.97 |
| 325 | 233 | 70.8868 | 320.5991 | 3048.53 | 0.49 | 46.64 | −0.88 |
| 326 | 233 | 70.7046 | 320.5452 | 3029.90 | 1.09 | 46.79 | −1.86 |
| 327 | 233 | 70.5226 | 320.4922 | 3008.89 | 0.97 | 46.93 | −2.16 |
| 328 | 233 | 70.3406 | 320.4402 | 2985.83 | 3.96 | 47.07 | −2.54 |
| 329 | 233 | 70.1587 | 320.3892 | 2965.21 | 1.76 | 47.21 | −0.99 |
| 330 | 233 | 69.9769 | 320.3391 | 2945.84 | 1.43 | 47.34 | −1.21 |
| 331 | 233 | 69.7952 | 320.2900 | 2922.57 | 9.89 | 47.43 | −3.29 |
| 332 | 233 | 69.6136 | 320.2417 | 2898.10 | 3.19 | 47.53 | −2.02 |
| 333 | 233 | 69.4321 | 320.1943 | 2876.59 | 0.68 | 47.62 | −2.31 |
| 334 | 233 | 69.2506 | 320.1477 | 2854.91 | 2.82 | 47.71 | −1.85 |
| 335 | 233 | 69.0692 | 320.1021 | 2831.79 | 18.58 | 47.81 | −1.91 |
| 336 | 233 | 68.8880 | 320.0571 | 2823.46 | 0.85 | 47.86 | −0.91 |
| 337 | 233 | 68.7068 | 320.0129 | 2796.81 | 2.72 | 47.89 | −1.26 |
| 338 | 233 | 68.5258 | 319.9697 | 2766.58 | 0.70 | 47.92 | −3.02 |
| 339 | 233 | 68.3448 | 319.9270 | 2726.00 | 14.26 | 47.95 | −2.90 |
| 340 | 233 | 68.1639 | 319.8850 | 2678.54 | 3.48 | 47.98 | −2.94 |
| 341 | 233 | 67.9831 | 319.8440 | 2624.79 | 6.84 | 48.01 | −4.21 |
| 342 | 233 | 67.8024 | 319.8035 | 2550.87 | 1.38 | 47.98 | −9.89 |
| 343 | 233 | 67.6219 | 319.7634 | 2489.05 | 4.92 | 47.95 | −9.00 |
| 344 | 233 | 67.4414 | 319.7244 | 2396.89 | 2.07 | 47.91 | −9.33 |
| 345 | 233 | 67.2610 | 319.6858 | 2331.98 | 5.99 | 47.88 | −10.07 |
| 346 | 233 | 67.0807 | 319.6479 | 2252.13 | 59.88 | 47.85 | −9.38 |
| 347 | 233 | 66.9006 | 319.6106 | 2178.25 | 0.99 | 47.79 | −9.28 |
| 348 | 233 | 66.7205 | 319.5737 | 2120.43 | 2.56 | 47.71 | −15.94 |
| 349 | 233 | 66.5406 | 319.5376 | 2088.37 | 6.02 | 47.63 | −10.12 |
| 350 | 233 | 66.3607 | 319.5020 | 2018.15 | 4.13 | 47.55 | −18.42 |
| 351 | 233 | 66.1810 | 319.4670 | 1907.20 | 4.34 | 47.46 | −28.08 |
| 352 | 233 | 66.0014 | 319.4326 | 1767.46 | 20.61 | 47.38 | −29.83 |
| 353 | 233 | 65.8219 | 319.3987 | 1627.13 | 7.17 | 47.28 | −30.98 |
| 354 | 233 | 65.6425 | 319.3652 | 1504.04 | 7.26 | 47.17 | −67.93 |
| 355 | 233 | 65.4632 | 319.3323 | 1295.30 | 14.12 | 47.06 | −55.57 |
| 356 | 233 | 65.2840 | 319.2998 | 1095.05 | 77.94 | 46.96 | −38.14 |
| 357 | 233 | 65.1050 | 319.2678 | 1040.58 | 40.17 | 46.85 | −22.22 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 358 | 233 | 64.9261 | 319.2363 | 1199.90 | 22.85 | 46.75 | −35.06 |
| 359 | 233 | 64.7472 | 319.2053 | −12.94 | 26.27 | 46.65 | 24.38 |
| 360 | 233 | 64.5685 | 319.1746 | 64.76 | 57.53 | 46.56 | 9.70 |
| 364 | 233 | 63.8549 | 319.0566 | −79.51 | 59.63 | 46.20 | 920.49 |
| 365 | 233 | 63.6768 | 319.0281 | 373.56 | 67.41 | 46.15 | 437.30 |
| 318 | 234 | 72.1437 | 321.6047 | 3187.05 | 0.24 | 45.91 | −0.51 |
| 319 | 234 | 71.9613 | 321.5366 | 3175.50 | 0.90 | 46.11 | −0.93 |
| 320 | 234 | 71.7789 | 321.4697 | 3161.50 | 0.41 | 46.29 | −0.75 |
| 321 | 234 | 71.5966 | 321.4043 | 3149.85 | 0.51 | 46.48 | −0.98 |
| 322 | 234 | 71.4143 | 321.3401 | 3135.20 | 0.71 | 46.66 | −1.57 |
| 323 | 234 | 71.2322 | 321.2771 | 3121.49 | 2.59 | 46.84 | −1.25 |
| 324 | 234 | 71.0501 | 321.2156 | 3101.28 | 0.74 | 47.02 | −1.36 |
| 325 | 234 | 70.8680 | 321.1550 | 3082.71 | 0.83 | 47.17 | −1.36 |
| 326 | 234 | 70.6861 | 321.0957 | 3064.24 | 1.16 | 47.32 | −1.58 |
| 327 | 234 | 70.5042 | 321.0376 | 3045.30 | 0.55 | 47.47 | −2.05 |
| 328 | 234 | 70.3224 | 320.9805 | 3029.04 | 0.82 | 47.61 | −0.64 |
| 329 | 234 | 70.1407 | 320.9246 | 3003.92 | 1.29 | 47.75 | −1.42 |
| 330 | 234 | 69.9591 | 320.8694 | 2979.42 | 1.84 | 47.89 | −1.81 |
| 331 | 234 | 69.7776 | 320.8154 | 2956.73 | 2.02 | 47.98 | −2.49 |
| 332 | 234 | 69.5961 | 320.7625 | 2935.81 | 2.24 | 48.07 | −1.24 |
| 333 | 234 | 69.4147 | 320.7104 | 2915.74 | 1.76 | 48.17 | −3.32 |
| 334 | 234 | 69.2334 | 320.6594 | 2896.83 | 0.79 | 48.26 | −1.44 |
| 335 | 234 | 69.0523 | 320.6091 | 2874.98 | 0.64 | 48.36 | −0.81 |
| 336 | 234 | 68.8712 | 320.5598 | 2858.02 | 1.58 | 48.41 | −1.43 |
| 337 | 234 | 68.6901 | 320.5115 | 2826.80 | 1.54 | 48.44 | −1.28 |
| 338 | 234 | 68.5092 | 320.4636 | 2785.02 | 2.35 | 48.47 | −1.16 |
| 339 | 234 | 68.3284 | 320.4170 | 2733.62 | 5.46 | 48.50 | −7.93 |
| 340 | 234 | 68.1477 | 320.3708 | 2681.72 | 2.01 | 48.53 | −3.51 |
| 341 | 234 | 67.9670 | 320.3257 | 2621.29 | 1.08 | 48.55 | −4.53 |
| 342 | 234 | 67.7865 | 320.2810 | 2542.89 | 10.38 | 48.52 | −9.80 |
| 343 | 234 | 67.6061 | 320.2373 | 2468.38 | 2.07 | 48.49 | −6.08 |
| 344 | 234 | 67.4258 | 320.1943 | 2338.99 | 6.17 | 48.45 | −11.90 |
| 345 | 234 | 67.2455 | 320.1519 | 2286.85 | 13.77 | 48.42 | −11.21 |
| 346 | 234 | 67.0654 | 320.1104 | 2183.70 | 2.84 | 48.39 | −14.48 |
| 347 | 234 | 66.8853 | 320.0693 | 2091.01 | 3.41 | 48.32 | −7.74 |
| 348 | 234 | 66.7054 | 320.0291 | 2012.90 | 4.65 | 48.24 | −11.31 |
| 349 | 234 | 66.5256 | 319.9893 | 1972.25 | 9.15 | 48.16 | −18.49 |
| 350 | 234 | 66.3459 | 319.9502 | 1941.73 | 4.42 | 48.08 | −10.09 |
| 351 | 234 | 66.1663 | 319.9116 | 1817.36 | 5.44 | 48.00 | −26.77 |
| 352 | 234 | 65.9868 | 319.8738 | 1620.45 | 2.76 | 47.91 | −56.81 |
| 353 | 234 | 65.8074 | 319.8364 | 1307.07 | 31.82 | 47.81 | −171.96 |
| 354 | 234 | 65.6281 | 319.7998 | 1326.85 | 3.35 | 47.70 | 146.83 |
| 355 | 234 | 65.4490 | 319.7634 | 979.42 | 12.33 | 47.60 | 78.83 |
| 356 | 234 | 65.2699 | 319.7278 | 890.57 | 22.60 | 47.49 | 145.31 |
| 357 | 234 | 65.0910 | 319.6926 | 612.49 | 27.22 | 47.39 | −28.53 |
| 318 | 235 | 72.1217 | 322.1992 | 3201.25 | 0.81 | 46.38 | −0.62 |
| 319 | 235 | 71.9394 | 322.1250 | 3194.98 | 2.29 | 46.59 | −0.23 |
| 320 | 235 | 71.7573 | 322.0522 | 3182.50 | 0.52 | 46.78 | −0.22 |
| 321 | 235 | 71.5752 | 321.9810 | 3172.95 | 2.46 | 46.98 | −0.55 |
| 322 | 235 | 71.3932 | 321.9111 | 3161.80 | 0.45 | 47.16 | −0.96 |
| 323 | 235 | 71.2112 | 321.8428 | 3148.76 | 0.99 | 47.35 | −0.88 |
| 324 | 235 | 71.0293 | 321.7756 | 3131.38 | 3.77 | 47.53 | −0.89 |
| 325 | 235 | 70.8475 | 321.7097 | 3114.15 | 1.13 | 47.69 | −1.14 |
| 326 | 235 | 70.6658 | 321.6453 | 3095.55 | 0.77 | 47.84 | −1.37 |
| 327 | 235 | 70.4841 | 321.5818 | 3075.55 | 2.68 | 47.99 | −1.86 |
| 328 | 235 | 70.3025 | 321.5198 | 3056.72 | 3.38 | 48.14 | −1.12 |
| 329 | 235 | 70.1210 | 321.4587 | 3034.27 | 1.12 | 48.29 | −1.42 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 330 | 235 | 69.9396 | 321.3989 | 3012.71 | 1.93 | 48.42 | −1.22 |
| 331 | 235 | 69.7582 | 321.3401 | 2989.37 | 1.11 | 48.52 | −3.39 |
| 332 | 235 | 69.5770 | 321.2825 | 2971.64 | 4.07 | 48.62 | −1.66 |
| 333 | 235 | 69.3958 | 321.2256 | 2951.89 | 1.55 | 48.71 | −1.04 |
| 334 | 235 | 69.2147 | 321.1702 | 2934.58 | 0.68 | 48.81 | −0.82 |
| 335 | 235 | 69.0337 | 321.1155 | 2912.02 | 0.80 | 48.91 | 0.07 |
| 336 | 235 | 68.8527 | 321.0618 | 2883.23 | 1.79 | 48.95 | −1.81 |
| 337 | 235 | 68.6719 | 321.0088 | 2845.21 | 1.20 | 48.98 | −2.49 |
| 338 | 235 | 68.4911 | 320.9570 | 2802.76 | 7.19 | 49.02 | −2.44 |
| 339 | 235 | 68.3105 | 320.9060 | 2745.99 | 1.31 | 49.05 | −6.13 |
| 340 | 235 | 68.1299 | 320.8560 | 2697.33 | 2.85 | 49.08 | −4.21 |
| 341 | 235 | 67.9495 | 320.8066 | 2612.29 | 3.75 | 49.09 | −19.77 |
| 342 | 235 | 67.7691 | 320.7581 | 2541.72 | 3.42 | 49.06 | −8.06 |
| 343 | 235 | 67.5888 | 320.7104 | 2465.05 | 7.45 | 49.03 | −17.47 |
| 344 | 235 | 67.4086 | 320.6636 | 2370.57 | 10.28 | 48.99 | −13.38 |
| 345 | 235 | 67.2285 | 320.6174 | 2245.61 | 6.57 | 48.96 | −20.63 |
| 346 | 235 | 67.0486 | 320.5720 | 2102.37 | 17.49 | 48.93 | −30.67 |
| 347 | 235 | 66.8687 | 320.5273 | 1994.18 | 4.64 | 48.86 | −17.99 |
| 348 | 235 | 66.6889 | 320.4834 | 1873.24 | 1.97 | 48.78 | −18.88 |
| 349 | 235 | 66.5092 | 320.4402 | 1818.52 | 4.77 | 48.70 | −13.32 |
| 350 | 235 | 66.3296 | 320.3977 | 1800.20 | 10.28 | 48.62 | −22.40 |
| 351 | 235 | 66.1502 | 320.3557 | 1686.94 | 15.94 | 48.53 | −57.33 |
| 352 | 235 | 65.9708 | 320.3145 | 1434.94 | 25.48 | 48.45 | −176.97 |
| 353 | 235 | 65.7915 | 320.2737 | 1260.51 | 35.50 | 48.34 | 66.12 |
| 354 | 235 | 65.6124 | 320.2336 | 1348.19 | 18.75 | 48.24 | 607.91 |
| 355 | 235 | 65.4334 | 320.1943 | 640.67 | 20.60 | 48.14 | 137.47 |
| 317 | 236 | 72.2797 | 322.8738 | 3187.56 | 0.50 | 46.63 | −0.72 |
| 318 | 236 | 72.0977 | 322.7920 | 3193.15 | 0.76 | 46.85 | −0.66 |
| 319 | 236 | 71.9157 | 322.7117 | 3182.90 | 0.87 | 47.06 | −0.73 |
| 320 | 236 | 71.7338 | 322.6333 | 3176.91 | 0.37 | 47.26 | −0.57 |
| 321 | 236 | 71.5520 | 322.5562 | 3177.75 | 0.46 | 47.46 | −0.58 |
| 322 | 236 | 71.3702 | 322.4807 | 3178.59 | 0.31 | 47.66 | −0.15 |
| 323 | 236 | 71.1885 | 322.4067 | 3170.29 | 1.50 | 47.85 | −0.56 |
| 324 | 236 | 71.0069 | 322.3342 | 3154.78 | 0.81 | 48.04 | −0.49 |
| 325 | 236 | 70.8253 | 322.2632 | 3139.44 | 1.43 | 48.21 | −0.92 |
| 326 | 236 | 70.6438 | 322.1934 | 3121.32 | 1.06 | 48.36 | −0.82 |
| 327 | 236 | 70.4623 | 322.1250 | 3102.63 | 1.06 | 48.52 | −0.64 |
| 328 | 236 | 70.2809 | 322.0576 | 3080.68 | 0.99 | 48.68 | −0.44 |
| 329 | 236 | 70.0996 | 321.9917 | 3060.27 | 0.59 | 48.83 | −0.41 |
| 330 | 236 | 69.9184 | 321.9270 | 3038.24 | 1.69 | 48.96 | −0.93 |
| 331 | 236 | 69.7373 | 321.8635 | 3019.52 | 0.55 | 49.06 | −0.35 |
| 332 | 236 | 69.5562 | 321.8013 | 2998.08 | 3.84 | 49.16 | −0.94 |
| 333 | 236 | 69.3752 | 321.7400 | 2980.57 | 0.39 | 49.26 | −0.12 |
| 334 | 236 | 69.1943 | 321.6797 | 2963.32 | 0.23 | 49.36 | −0.89 |
| 335 | 236 | 69.0135 | 321.6206 | 2934.79 | 2.99 | 49.45 | −1.25 |
| 336 | 236 | 68.8327 | 321.5625 | 2903.46 | 0.69 | 49.49 | −1.85 |
| 337 | 236 | 68.6521 | 321.5056 | 2864.13 | 1.36 | 49.53 | −2.49 |
| 338 | 236 | 68.4715 | 321.4495 | 2787.31 | 4.14 | 49.56 | −2.46 |
| 339 | 236 | 68.2910 | 321.3943 | 2767.99 | 4.92 | 49.59 | −2.20 |
| 340 | 236 | 68.1107 | 321.3401 | 2700.59 | 9.08 | 49.63 | −17.07 |
| 341 | 236 | 67.9304 | 321.2869 | 2590.13 | 15.56 | 49.63 | −56.36 |
| 342 | 236 | 67.7502 | 321.2344 | 2545.03 | 5.00 | 49.60 | −8.58 |
| 343 | 236 | 67.5700 | 321.1829 | 2465.31 | 25.76 | 49.57 | −16.10 |
| 344 | 236 | 67.3900 | 321.1321 | 2351.21 | 7.93 | 49.54 | −9.93 |
| 345 | 236 | 67.2101 | 321.0823 | 2244.17 | 14.07 | 49.50 | −26.40 |
| 346 | 236 | 67.0303 | 321.0332 | 2061.69 | 24.57 | 49.47 | −51.28 |
| 347 | 236 | 66.8505 | 320.9849 | 1912.07 | 6.54 | 49.40 | −33.65 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 348 | 236 | 66.6709 | 320.9373 | 1737.77 | 3.18 | 49.32 | −9.80 |
| 349 | 236 | 66.4914 | 320.8906 | 1626.59 | 12.01 | 49.24 | −11.19 |
| 350 | 236 | 66.3120 | 320.8445 | 1691.13 | 2.89 | 49.15 | −6.55 |
| 351 | 236 | 66.1326 | 320.7991 | 1655.19 | 20.76 | 49.07 | −1.28 |
| 352 | 236 | 65.9534 | 320.7544 | 1576.01 | 22.30 | 48.99 | 7.65 |
| 353 | 236 | 65.7743 | 320.7104 | 1447.70 | 9.48 | 48.88 | 624.56 |
| 317 | 237 | 72.2536 | 323.4709 | 3155.94 | 0.29 | 47.07 | −1.16 |
| 318 | 237 | 72.0719 | 323.3831 | 3148.46 | 2.10 | 47.30 | −2.70 |
| 319 | 237 | 71.8902 | 323.2971 | 3147.97 | 18.29 | 47.52 | −0.59 |
| 320 | 237 | 71.7085 | 323.2126 | 3147.13 | 0.94 | 47.73 | −1.39 |
| 321 | 237 | 71.5270 | 323.1299 | 3149.16 | 0.51 | 47.94 | −1.43 |
| 322 | 237 | 71.3454 | 323.0488 | 3157.04 | 1.53 | 48.15 | −0.72 |
| 323 | 237 | 71.1640 | 322.9695 | 3163.06 | 0.26 | 48.35 | −0.54 |
| 324 | 237 | 70.9826 | 322.8916 | 3165.83 | 0.46 | 48.55 | −0.17 |
| 325 | 237 | 70.8013 | 322.8152 | 3154.67 | 0.48 | 48.71 | −0.13 |
| 326 | 237 | 70.6200 | 322.7402 | 3136.55 | 0.23 | 48.88 | −0.41 |
| 327 | 237 | 70.4388 | 322.6667 | 3115.80 | 1.24 | 49.04 | −0.53 |
| 328 | 237 | 70.2576 | 322.5945 | 3088.21 | 4.52 | 49.20 | −1.20 |
| 329 | 237 | 70.0766 | 322.5237 | 3062.25 | 0.92 | 49.36 | −0.53 |
| 330 | 237 | 69.8956 | 322.4541 | 3036.77 | 1.48 | 49.49 | −1.76 |
| 331 | 237 | 69.7146 | 322.3860 | 3015.70 | 1.08 | 49.59 | −1.59 |
| 332 | 237 | 69.5338 | 322.3188 | 2998.30 | 0.38 | 49.70 | −1.09 |
| 333 | 237 | 69.3530 | 322.2532 | 2984.46 | 0.61 | 49.80 | −0.74 |
| 334 | 237 | 69.1723 | 322.1885 | 2969.19 | 1.93 | 49.90 | −0.84 |
| 335 | 237 | 68.9917 | 322.1250 | 2946.92 | 1.53 | 50.00 | −1.09 |
| 336 | 237 | 68.8112 | 322.0625 | 2917.25 | 0.64 | 50.04 | −1.69 |
| 337 | 237 | 68.6307 | 322.0012 | 2879.52 | 2.39 | 50.07 | −1.69 |
| 338 | 237 | 68.4503 | 321.9409 | 2829.98 | 3.78 | 50.11 | −3.99 |
| 339 | 237 | 68.2701 | 321.8816 | 2795.11 | 14.45 | 50.14 | −2.87 |
| 340 | 237 | 68.0899 | 321.8232 | 2735.03 | 17.32 | 50.17 | −3.86 |
| 341 | 237 | 67.9097 | 321.7661 | 2661.40 | 13.29 | 50.17 | −9.77 |
| 342 | 237 | 67.7297 | 321.7097 | 2586.81 | 4.56 | 50.14 | −21.17 |
| 343 | 237 | 67.5498 | 321.6543 | 2512.84 | 5.01 | 50.11 | −7.90 |
| 344 | 237 | 67.3699 | 321.5999 | 2441.62 | 8.75 | 50.08 | −8.64 |
| 345 | 237 | 67.1902 | 321.5461 | 2224.39 | 39.83 | 50.05 | −75.44 |
| 346 | 237 | 67.0105 | 321.4934 | 2025.87 | 5.37 | 50.02 | −83.29 |
| 347 | 237 | 66.8310 | 321.4414 | 1808.02 | 5.61 | 49.94 | −68.04 |
| 348 | 237 | 66.6515 | 321.3904 | 1556.69 | 11.85 | 49.86 | −34.77 |
| 349 | 237 | 66.4722 | 321.3401 | 1122.36 | 16.20 | 49.78 | 172.88 |
| 350 | 237 | 66.2929 | 321.2905 | 1257.85 | 69.95 | 49.70 | −203.35 |
| 351 | 237 | 66.1138 | 321.2417 | 1763.70 | 15.76 | 49.62 | 104.91 |
| 352 | 237 | 65.9347 | 321.1938 | 1133.96 | 93.74 | 49.53 | −425.82 |
| 317 | 238 | 72.2256 | 324.0664 | 3119.89 | 0.55 | 47.51 | −0.59 |
| 318 | 238 | 72.0441 | 323.9724 | 3114.64 | 1.20 | 47.76 | −3.53 |
| 319 | 238 | 71.8627 | 323.8806 | 3107.05 | 3.04 | 47.98 | −1.96 |
| 320 | 238 | 71.6814 | 323.7905 | 3108.43 | 0.99 | 48.20 | −2.88 |
| 321 | 238 | 71.5001 | 323.7021 | 3117.30 | 0.94 | 48.42 | −1.21 |
| 322 | 238 | 71.3189 | 323.6155 | 3124.43 | 23.06 | 48.63 | −1.61 |
| 323 | 238 | 71.1377 | 323.5308 | 3135.34 | 15.82 | 48.84 | −0.75 |
| 324 | 238 | 70.9566 | 323.4475 | 3140.31 | 2.77 | 49.04 | −0.79 |
| 325 | 238 | 70.7755 | 323.3657 | 3137.73 | 0.15 | 49.22 | −0.60 |
| 326 | 238 | 70.5945 | 323.2856 | 3124.67 | 0.48 | 49.39 | −0.88 |
| 327 | 238 | 70.4135 | 323.2070 | 3100.44 | 0.92 | 49.56 | −1.73 |
| 328 | 238 | 70.2326 | 323.1299 | 3072.73 | 0.45 | 49.72 | −1.98 |
| 329 | 238 | 70.0518 | 323.0542 | 3040.41 | 0.96 | 49.89 | −1.67 |
| 330 | 238 | 69.8711 | 322.9800 | 3012.79 | 1.94 | 50.02 | −1.94 |
| 331 | 238 | 69.6904 | 322.9070 | 2985.01 | 3.76 | 50.12 | −2.43 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 332 | 238 | 69.5098 | 322.8354 | 2962.91 | 0.42 | 50.23 | −2.77 |
| 333 | 238 | 69.3292 | 322.7651 | 2954.66 | 0.25 | 50.34 | −2.57 |
| 334 | 238 | 69.1487 | 322.6960 | 2940.13 | 0.73 | 50.44 | −1.99 |
| 335 | 238 | 68.9683 | 322.6279 | 2930.11 | 1.55 | 50.54 | −1.19 |
| 336 | 238 | 68.7880 | 322.5613 | 2919.96 | 1.69 | 50.57 | −0.72 |
| 337 | 238 | 68.6078 | 322.4958 | 2887.91 | 4.99 | 50.61 | −4.18 |
| 338 | 238 | 68.4276 | 322.4314 | 2851.17 | 1.52 | 50.65 | −1.10 |
| 339 | 238 | 68.2475 | 322.3679 | 2808.01 | 2.50 | 50.69 | −3.96 |
| 340 | 238 | 68.0675 | 322.3057 | 2781.79 | 9.93 | 50.72 | 4.67 |
| 341 | 238 | 67.8876 | 322.2444 | 2704.49 | 6.96 | 50.72 | −0.89 |
| 342 | 238 | 67.7078 | 322.1841 | 2667.41 | 5.85 | 50.69 | −11.11 |
| 343 | 238 | 67.5281 | 322.1250 | 2588.86 | 10.38 | 50.66 | −31.26 |
| 344 | 238 | 67.3484 | 322.0667 | 2542.43 | 12.53 | 50.63 | −31.07 |
| 345 | 238 | 67.1689 | 322.0093 | 2386.96 | 6.63 | 50.59 | −50.45 |
| 346 | 238 | 66.9894 | 321.9529 | 1970.04 | 14.72 | 50.56 | −83.53 |
| 347 | 238 | 66.8100 | 321.8972 | 1718.57 | 53.60 | 50.48 | −97.27 |
| 348 | 238 | 66.6307 | 321.8428 | 1361.06 | 19.14 | 50.40 | −215.85 |
| 349 | 238 | 66.4516 | 321.7888 | 1196.44 | 46.74 | 50.32 | −75.95 |
| 350 | 238 | 66.2725 | 321.7358 | 1158.88 | 102.07 | 50.24 | −191.47 |
| 317 | 239 | 72.1957 | 324.6597 | 3059.93 | 0.45 | 47.94 | −5.48 |
| 318 | 239 | 72.0146 | 324.5601 | 3061.60 | 1.71 | 48.20 | −3.12 |
| 319 | 239 | 71.8335 | 324.4622 | 3061.60 | 10.99 | 48.43 | −2.39 |
| 320 | 239 | 71.6525 | 324.3665 | 3070.91 | 2.35 | 48.66 | −1.84 |
| 321 | 239 | 71.4715 | 324.2725 | 3079.15 | 2.72 | 48.89 | −1.09 |
| 322 | 239 | 71.2905 | 324.1804 | 3089.33 | 2.34 | 49.11 | −1.63 |
| 323 | 239 | 71.1096 | 324.0901 | 3101.47 | 1.41 | 49.33 | −1.34 |
| 324 | 239 | 70.9288 | 324.0017 | 3110.50 | 1.06 | 49.54 | −1.01 |
| 325 | 239 | 70.7480 | 323.9148 | 3110.41 | 0.30 | 49.72 | −0.56 |
| 326 | 239 | 70.5673 | 323.8296 | 3100.13 | 4.47 | 49.89 | −1.38 |
| 327 | 239 | 70.3866 | 323.7461 | 3074.80 | 0.61 | 50.07 | −1.31 |
| 328 | 239 | 70.2060 | 323.6641 | 3043.95 | 1.15 | 50.24 | −1.72 |
| 329 | 239 | 70.0254 | 323.5835 | 3015.04 | 5.57 | 50.41 | −3.46 |
| 330 | 239 | 69.8449 | 323.5044 | 2979.18 | 0.37 | 50.54 | −2.96 |
| 331 | 239 | 69.6645 | 323.4268 | 2942.50 | 1.70 | 50.65 | −5.01 |
| 332 | 239 | 69.4841 | 323.3506 | 2907.32 | 15.25 | 50.76 | −4.73 |
| 333 | 239 | 69.3038 | 323.2759 | 2887.26 | 1.05 | 50.87 | −3.01 |
| 334 | 239 | 69.1236 | 323.2021 | 2886.14 | 0.35 | 50.98 | −3.93 |
| 335 | 239 | 68.9434 | 323.1299 | 2883.40 | 0.96 | 51.07 | −1.91 |
| 336 | 239 | 68.7633 | 323.0591 | 2884.52 | 0.75 | 51.11 | −1.66 |
| 337 | 239 | 68.5833 | 322.9893 | 2889.45 | 0.72 | 51.16 | −1.07 |
| 338 | 239 | 68.4034 | 322.9207 | 2876.75 | 50.92 | 51.19 | −0.71 |
| 339 | 239 | 68.2235 | 322.8533 | 2847.04 | 0.85 | 51.23 | −3.68 |
| 340 | 239 | 68.0437 | 322.7869 | 2807.19 | 20.79 | 51.27 | −5.24 |
| 341 | 239 | 67.8640 | 322.7217 | 2775.78 | 6.78 | 51.26 | −7.91 |
| 342 | 239 | 67.6844 | 322.6575 | 2755.44 | 9.59 | 51.23 | −8.05 |
| 343 | 239 | 67.5049 | 322.5945 | 2767.29 | 2.74 | 51.20 | −10.94 |
| 344 | 239 | 67.3254 | 322.5325 | 2668.15 | 23.67 | 51.17 | −38.83 |
| 345 | 239 | 67.1461 | 322.4714 | 2597.98 | 11.53 | 51.14 | −34.58 |
| 346 | 239 | 66.9668 | 322.4114 | 2143.84 | 82.47 | 51.10 | −156.32 |
| 347 | 239 | 66.7876 | 322.3523 | 1703.54 | 8.78 | 51.03 | −131.75 |
| 348 | 239 | 66.6085 | 322.2942 | 1286.21 | 1.34 | 50.95 | −92.98 |
| 349 | 239 | 66.4295 | 322.2368 | 985.45 | 69.93 | 50.87 | −106.29 |
| 317 | 240 | 72.1639 | 325.2510 | 3008.19 | 1.19 | 48.37 | −4.53 |
| 318 | 240 | 71.9831 | 325.1455 | 3002.86 | 2.79 | 48.63 | −4.28 |
| 319 | 240 | 71.8024 | 325.0420 | 3012.98 | 6.34 | 48.88 | −0.41 |
| 320 | 240 | 71.6217 | 324.9404 | 3020.48 | 0.83 | 49.12 | −2.12 |
| 321 | 240 | 71.4410 | 324.8411 | 3032.68 | 2.18 | 49.35 | −1.92 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 322 | 240 | 71.2604 | 324.7434 | 3048.38 | 1.28 | 49.58 | −2.52 |
| 323 | 240 | 71.0798 | 324.6479 | 3065.83 | 10.79 | 49.81 | −0.63 |
| 324 | 240 | 70.8993 | 324.5542 | 3076.54 | 2.96 | 50.02 | −1.14 |
| 325 | 240 | 70.7188 | 324.4622 | 3079.51 | 7.44 | 50.21 | −0.97 |
| 326 | 240 | 70.5383 | 324.3721 | 3063.81 | 2.04 | 50.39 | −2.25 |
| 327 | 240 | 70.3579 | 324.2834 | 3040.69 | 5.24 | 50.58 | 0.12 |
| 328 | 240 | 70.1776 | 324.1965 | 3021.40 | 0.98 | 50.76 | −1.40 |
| 329 | 240 | 69.9973 | 324.1113 | 2984.02 | 1.45 | 50.94 | −3.15 |
| 330 | 240 | 69.8171 | 324.0276 | 2946.83 | 1.07 | 51.06 | −3.04 |
| 331 | 240 | 69.6369 | 323.9453 | 2886.33 | 2.07 | 51.18 | −10.47 |
| 332 | 240 | 69.4568 | 323.8645 | 2831.72 | 4.36 | 51.29 | −5.78 |
| 333 | 240 | 69.2768 | 323.7852 | 2805.49 | 3.67 | 51.41 | 1.06 |
| 334 | 240 | 69.0968 | 323.7073 | 2803.71 | 9.82 | 51.52 | −8.08 |
| 335 | 240 | 68.9169 | 323.6306 | 2816.18 | 0.73 | 51.60 | −8.80 |
| 336 | 240 | 68.7370 | 323.5554 | 2828.22 | 1.11 | 51.65 | −6.31 |
| 337 | 240 | 68.5573 | 323.4814 | 2841.84 | 2.71 | 51.69 | −4.34 |
| 338 | 240 | 68.3776 | 323.4087 | 2887.23 | 1.61 | 51.74 | −0.95 |
| 339 | 240 | 68.1979 | 323.3374 | 2896.22 | 9.12 | 51.78 | −4.25 |
| 340 | 240 | 68.0184 | 323.2671 | 2880.48 | 8.62 | 51.82 | −4.71 |
| 341 | 240 | 67.8389 | 323.1980 | 2859.92 | 4.58 | 51.80 | −10.33 |
| 342 | 240 | 67.6595 | 323.1299 | 2881.11 | 54.76 | 51.77 | −6.42 |
| 343 | 240 | 67.4802 | 323.0632 | 2931.99 | 4.73 | 51.75 | −9.66 |
| 344 | 240 | 67.3010 | 322.9973 | 2893.42 | 18.89 | 51.72 | −38.13 |
| 345 | 240 | 67.1218 | 322.9326 | 2700.40 | 28.29 | 51.69 | −158.84 |
| 346 | 240 | 66.9428 | 322.8689 | 2275.16 | 16.80 | 51.65 | −177.61 |
| 347 | 240 | 66.7638 | 322.8064 | 1545.06 | 3.94 | 51.57 | −247.96 |
| 348 | 240 | 66.5849 | 322.7446 | 1223.25 | 12.51 | 51.49 | −54.69 |
| 349 | 240 | 66.4061 | 322.6838 | 663.36 | 137.53 | 51.42 | −305.17 |
| 317 | 241 | 72.1303 | 325.8401 | 2951.37 | 1.17 | 48.79 | −3.87 |
| 318 | 241 | 71.9499 | 325.7288 | 2950.90 | 23.12 | 49.06 | −5.70 |
| 319 | 241 | 71.7695 | 325.6196 | 2955.51 | 2.04 | 49.31 | −4.37 |
| 320 | 241 | 71.5891 | 325.5125 | 2968.40 | 1.64 | 49.56 | −3.46 |
| 321 | 241 | 71.4088 | 325.4075 | 2982.90 | 4.07 | 49.81 | −3.59 |
| 322 | 241 | 71.2285 | 325.3047 | 3003.04 | 3.50 | 50.05 | −4.27 |
| 323 | 241 | 71.0482 | 325.2039 | 3019.95 | 1.22 | 50.29 | −2.43 |
| 324 | 241 | 70.8680 | 325.1050 | 3032.44 | 1.96 | 50.50 | −2.80 |
| 325 | 241 | 70.6879 | 325.0078 | 3042.01 | 5.81 | 50.70 | −1.51 |
| 326 | 241 | 70.5077 | 324.9126 | 3023.10 | 0.61 | 50.89 | −4.02 |
| 327 | 241 | 70.3276 | 324.8191 | 2993.02 | 0.91 | 51.08 | −3.70 |
| 328 | 241 | 70.1476 | 324.7275 | 2968.69 | 2.65 | 51.27 | −3.34 |
| 329 | 241 | 69.9676 | 324.6375 | 2937.85 | 2.09 | 51.44 | −3.14 |
| 330 | 241 | 69.7876 | 324.5491 | 2908.66 | 3.94 | 51.57 | −3.59 |
| 331 | 241 | 69.6078 | 324.4622 | 2816.87 | 30.94 | 51.69 | −12.57 |
| 332 | 241 | 69.4279 | 324.3770 | 2726.54 | 6.64 | 51.82 | −24.89 |
| 333 | 241 | 69.2482 | 324.2932 | 2690.89 | 8.28 | 51.94 | −14.22 |
| 334 | 241 | 69.0684 | 324.2109 | 2712.93 | 1.15 | 52.06 | −22.66 |
| 335 | 241 | 68.8888 | 324.1301 | 2725.42 | 13.36 | 52.14 | −32.00 |
| 336 | 241 | 68.7092 | 324.0505 | 2740.81 | 4.36 | 52.19 | −16.97 |
| 337 | 241 | 68.5297 | 323.9724 | 2783.38 | 11.51 | 52.23 | −6.64 |
| 338 | 241 | 68.3502 | 323.8958 | 2879.62 | 2.59 | 52.28 | −2.23 |
| 339 | 241 | 68.1709 | 323.8203 | 2916.57 | 10.54 | 52.32 | −1.48 |
| 340 | 241 | 67.9915 | 323.7461 | 2926.05 | 2.23 | 52.37 | −4.11 |
| 341 | 241 | 67.8123 | 323.6731 | 3016.90 | 16.73 | 52.34 | 7.95 |
| 342 | 241 | 67.6331 | 323.6013 | 3015.66 | 4.87 | 52.32 | 32.70 |
| 343 | 241 | 67.4541 | 323.5308 | 3051.09 | 30.43 | 52.29 | −36.34 |
| 344 | 241 | 67.2751 | 323.4612 | 3048.29 | 8.20 | 52.27 | −63.14 |
| 345 | 241 | 67.0961 | 323.3928 | 2766.03 | 6.37 | 52.24 | −132.31 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 346 | 241 | 66.9173 | 323.3254 | 2291.89 | 11.54 | 52.19 | −235.58 |
| 347 | 241 | 66.7385 | 323.2593 | 1604.22 | 9.72 | 52.12 | −178.18 |
| 348 | 241 | 66.5599 | 323.1941 | 1088.62 | 5.99 | 52.04 | −70.83 |
| 349 | 241 | 66.3813 | 323.1299 | 501.54 | 14.71 | 51.97 | 445.98 |
| 316 | 242 | 72.2749 | 326.5466 | 2891.24 | 0.55 | 48.91 | −3.28 |
| 317 | 242 | 72.0948 | 326.4270 | 2886.27 | 3.54 | 49.20 | −4.76 |
| 318 | 242 | 71.9148 | 326.3098 | 2893.36 | 2.73 | 49.48 | −3.53 |
| 319 | 242 | 71.7348 | 326.1951 | 2889.17 | 5.53 | 49.74 | −5.26 |
| 320 | 242 | 71.5548 | 326.0825 | 2904.79 | 1.77 | 50.01 | −4.14 |
| 321 | 242 | 71.3748 | 325.9722 | 2922.34 | 1.91 | 50.26 | −4.92 |
| 322 | 242 | 71.1949 | 325.8640 | 2965.15 | 6.55 | 50.51 | 10.98 |
| 323 | 242 | 71.0149 | 325.7578 | 2973.08 | 2.78 | 50.76 | −3.76 |
| 324 | 242 | 70.8351 | 325.6538 | 2988.30 | 8.21 | 50.97 | −4.16 |
| 325 | 242 | 70.6552 | 235.5518 | 3000.16 | 1.23 | 51.18 | −2.47 |
| 326 | 242 | 70.4754 | 325.4514 | 2986.18 | 3.41 | 51.38 | −1.29 |
| 327 | 242 | 70.2956 | 325.3533 | 2950.13 | 2.47 | 51.58 | −5.36 |
| 328 | 242 | 70.1159 | 325.2566 | 2910.46 | 3.56 | 51.77 | −4.56 |
| 329 | 242 | 69.9362 | 325.1619 | 2862.53 | 3.31 | 51.95 | −10.44 |
| 330 | 242 | 69.7566 | 325.0688 | 2791.64 | 32.29 | 52.08 | −12.04 |
| 331 | 242 | 69.5770 | 324.9775 | 2703.80 | 22.31 | 52.21 | −23.79 |
| 332 | 242 | 69.3974 | 324.8879 | 2579.93 | 19.91 | 52.34 | −25.25 |
| 333 | 242 | 69.2179 | 324.7998 | 2390.23 | 8.44 | 52.47 | −49.54 |
| 334 | 242 | 69.0385 | 324.7131 | 2439.96 | 16.46 | 52.59 | −41.36 |
| 335 | 242 | 68.8591 | 324.6279 | 2579.28 | 34.84 | 52.66 | −40.32 |
| 336 | 242 | 68.6798 | 324.5444 | 2583.53 | 57.85 | 52.72 | −38.16 |
| 337 | 242 | 68.5006 | 324.4622 | 2716.55 | 4.95 | 52.77 | −34.15 |
| 338 | 242 | 68.3214 | 324.3813 | 2815.79 | 27.73 | 52.82 | −7.42 |
| 339 | 242 | 68.1423 | 324.3020 | 2809.22 | 20.30 | 52.87 | −18.37 |
| 340 | 242 | 67.9632 | 324.2239 | 2819.31 | 2.13 | 52.90 | −29.52 |
| 341 | 242 | 67.7842 | 324.1470 | 2892.81 | 14.93 | 52.88 | −29.44 |
| 342 | 242 | 67.6053 | 324.0713 | 2963.78 | 59.18 | 52.86 | −8.39 |
| 343 | 242 | 67.4265 | 323.9971 | 2885.03 | 10.25 | 52.84 | −52.65 |
| 344 | 242 | 67.2477 | 323.9238 | 2780.27 | 9.70 | 52.82 | −60.60 |
| 345 | 242 | 67.0690 | 323.8518 | 2292.76 | 3.37 | 52.79 | −105.17 |
| 346 | 242 | 66.8904 | 323.7810 | 2114.89 | 22.96 | 52.74 | −184.37 |
| 347 | 242 | 66.7119 | 323.7114 | 1380.97 | 53.73 | 52.67 | −137.55 |
| 348 | 242 | 66.5335 | 323.6426 | 503.73 | 246.04 | 52.59 | 62.54 |
| 349 | 242 | 66.3551 | 323.5752 | −148.15 | 66.85 | 52.52 | 851.85 |
| 316 | 243 | 72.2372 | 327.1367 | 2839.60 | 0.75 | 49.31 | −4.14 |
| 317 | 243 | 72.0575 | 327.0115 | 2830.97 | 3.27 | 49.61 | −4.81 |
| 318 | 243 | 71.8779 | 326.8884 | 2819.61 | 3.33 | 49.89 | −6.28 |
| 319 | 243 | 71.6982 | 326.7681 | 2817.62 | 6.09 | 50.17 | −7.99 |
| 320 | 243 | 71.5186 | 326.6501 | 2835.97 | 2.79 | 50.44 | −4.87 |
| 321 | 243 | 71.3390 | 326.5344 | 2862.79 | 3.22 | 50.70 | −5.17 |
| 322 | 243 | 71.1595 | 326.4211 | 2890.64 | 0.93 | 50.97 | −5.69 |
| 323 | 243 | 70.9799 | 326.3098 | 2912.12 | 1.10 | 51.22 | −3.42 |
| 324 | 243 | 70.8004 | 326.2007 | 2935.41 | 2.32 | 51.44 | −3.20 |
| 325 | 243 | 70.6209 | 326.0935 | 2960.79 | 0.56 | 51.66 | −1.92 |
| 326 | 243 | 70.4414 | 325.9885 | 2948.67 | 0.32 | 51.87 | −1.96 |
| 327 | 243 | 70.2619 | 325.8855 | 2901.70 | 2.12 | 52.07 | −7.41 |
| 328 | 243 | 70.0826 | 325.7842 | 2846.85 | 0.56 | 52.28 | −5.60 |
| 329 | 243 | 69.9032 | 325.6848 | 2779.05 | 3.29 | 52.45 | 1.80 |
| 330 | 243 | 69.7239 | 325.5872 | 2698.73 | 10.78 | 52.59 | −24.82 |
| 331 | 243 | 69.5446 | 325.4915 | 2570.53 | 12.84 | 52.72 | −28.20 |
| 332 | 243 | 69.3653 | 325.3972 | 2398.64 | 17.08 | 52.86 | −66.02 |
| 333 | 243 | 69.1862 | 325.3047 | 2103.89 | 25.73 | 52.99 | −65.36 |
| 334 | 243 | 69.0070 | 325.2139 | 2172.81 | 19.36 | 53.13 | −37.94 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 335 | 243 | 68.8279 | 325.1245 | 2257.46 | 23.52 | 53.19 | −44.29 |
| 336 | 243 | 68.6489 | 325.0369 | 2445.24 | 33.33 | 53.25 | −65.42 |
| 337 | 243 | 68.4700 | 324.9504 | 2687.59 | 38.21 | 53.30 | −36.73 |
| 338 | 243 | 68.2910 | 324.8657 | 2621.93 | 20.66 | 53.36 | −54.90 |
| 339 | 243 | 68.1122 | 324.7822 | 2399.18 | 37.99 | 53.41 | −53.16 |
| 340 | 243 | 67.9334 | 324.7002 | 2372.29 | 30.94 | 53.44 | −149.99 |
| 341 | 243 | 67.7547 | 324.6196 | 2451.05 | 9.36 | 53.42 | −153.72 |
| 342 | 243 | 67.5760 | 324.5403 | 2552.79 | 55.29 | 53.40 | −104.59 |
| 343 | 243 | 67.3975 | 324.4622 | 2389.08 | 14.24 | 53.38 | −124.40 |
| 344 | 243 | 67.2189 | 324.3855 | 2145.90 | 10.66 | 53.36 | −236.71 |
| 345 | 243 | 67.0405 | 324.3098 | 1975.44 | 7.84 | 53.34 | −123.71 |
| 346 | 243 | 66.8621 | 324.2354 | 1669.67 | 49.68 | 53.28 | −203.62 |
| 347 | 243 | 66.6839 | 324.1621 | 1359.21 | 306.23 | 53.21 | −50.70 |
| 348 | 243 | 66.5056 | 324.0901 | 325.02 | 40.29 | 53.14 | 94.61 |
| 316 | 244 | 72.1976 | 327.7241 | 2811.26 | 5.94 | 49.69 | 7.16 |
| 317 | 244 | 72.0184 | 327.5933 | 2765.53 | 7.11 | 50.01 | −9.25 |
| 318 | 244 | 71.8392 | 327.4648 | 2729.91 | 6.46 | 50.30 | −14.92 |
| 319 | 244 | 71.6599 | 327.3389 | 2735.75 | 1.94 | 50.59 | −8.21 |
| 320 | 244 | 71.4807 | 327.2156 | 2760.17 | 15.87 | 50.87 | −12.06 |
| 321 | 244 | 71.3015 | 327.0947 | 2791.82 | 3.98 | 51.15 | −3.28 |
| 322 | 244 | 71.1223 | 326.9761 | 2824.44 | 5.33 | 51.42 | −5.04 |
| 323 | 244 | 70.9431 | 326.8596 | 2853.03 | 11.08 | 51.68 | −4.58 |
| 324 | 244 | 70.7640 | 326.7456 | 2872.31 | 4.51 | 51.90 | −6.43 |
| 325 | 244 | 70.5848 | 326.6335 | 2910.57 | 0.55 | 52.12 | −3.37 |
| 326 | 244 | 70.4057 | 326.5237 | 2907.03 | 15.65 | 52.34 | −0.91 |
| 327 | 244 | 70.2266 | 326.4158 | 2858.45 | 2.19 | 52.56 | −7.98 |
| 328 | 244 | 70.0476 | 326.3098 | 2790.24 | 3.96 | 52.77 | −8.18 |
| 329 | 244 | 69.8685 | 326.2058 | 2706.42 | 7.05 | 52.94 | −10.55 |
| 330 | 244 | 69.6895 | 326.1038 | 2547.11 | 5.03 | 53.09 | −30.55 |
| 331 | 244 | 69.5106 | 326.0034 | 2315.40 | 20.06 | 53.24 | −38.51 |
| 332 | 244 | 69.3317 | 325.9048 | 2267.12 | 27.94 | 53.38 | −42.73 |
| 333 | 244 | 69.1528 | 325.8081 | 2093.98 | 14.93 | 53.52 | −56.48 |
| 334 | 244 | 68.9740 | 325.7129 | 2043.24 | 19.05 | 53.64 | −19.36 |
| 335 | 244 | 68.7952 | 325.6196 | 1897.12 | 33.93 | 53.71 | −150.17 |
| 336 | 244 | 68.6165 | 325.5276 | 2322.63 | 32.18 | 53.77 | −97.20 |
| 337 | 244 | 68.4378 | 325.4373 | 2649.46 | 21.53 | 53.83 | −74.01 |
| 338 | 244 | 68.2592 | 325.3486 | 2492.46 | 58.24 | 53.89 | −69.24 |
| 339 | 244 | 68.0806 | 325.2612 | 2299.59 | 41.02 | 53.95 | −163.43 |
| 340 | 244 | 67.9021 | 325.1753 | 1938.19 | 89.66 | 53.97 | −123.40 |
| 341 | 244 | 67.7237 | 325.0908 | 1742.75 | 21.62 | 53.96 | −93.18 |
| 342 | 244 | 67.5453 | 325.0078 | 2168.22 | 33.99 | 53.95 | −83.04 |
| 343 | 244 | 67.3670 | 324.9260 | 1957.35 | 25.00 | 53.93 | −157.15 |
| 344 | 244 | 67.1887 | 324.8457 | 1806.20 | 22.95 | 53.91 | −76.43 |
| 345 | 244 | 67.0105 | 324.7666 | 1560.87 | 37.80 | 53.89 | 35.94 |
| 346 | 244 | 66.8324 | 324.6887 | 1365.32 | 42.96 | 53.83 | −223.26 |
| 347 | 244 | 66.6544 | 324.6121 | 1386.70 | 33.56 | 53.76 | 619.94 |
| 348 | 244 | 66.4764 | 324.5366 | 233.63 | 80.79 | 53.69 | 1233.63 |
| 316 | 245 | 72.1562 | 328.3091 | 2662.60 | 3.24 | 50.08 | −61.03 |
| 317 | 245 | 71.9774 | 328.1724 | 2618.77 | 23.99 | 50.40 | −16.88 |
| 318 | 245 | 71.7986 | 328.0386 | 2585.47 | 40.95 | 50.70 | −22.47 |
| 319 | 245 | 71.6198 | 327.9072 | 2637.24 | 2.00 | 51.00 | −11.91 |
| 320 | 245 | 71.4410 | 327.7786 | 2674.96 | 7.04 | 51.29 | −6.88 |
| 321 | 245 | 71.2622 | 327.6523 | 2715.73 | 2.32 | 51.58 | −8.83 |
| 322 | 245 | 71.0834 | 327.5286 | 2741.19 | 5.49 | 51.86 | −6.21 |
| 323 | 245 | 70.9046 | 327.4072 | 2767.60 | 11.29 | 52.12 | −3.43 |
| 324 | 245 | 70.7259 | 327.2881 | 2811.51 | 8.51 | 52.36 | −8.45 |
| 325 | 245 | 70.5471 | 327.1714 | 2845.46 | 2.10 | 52.59 | −3.90 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 326 | 245 | 70.3684 | 327.0566 | 2861.22 | 2.99 | 52.82 | −3.01 |
| 327 | 245 | 70.1896 | 326.9441 | 2821.55 | 1.72 | 53.05 | −6.69 |
| 328 | 245 | 70.0109 | 326.8335 | 2748.41 | 4.63 | 53.27 | −10.84 |
| 329 | 245 | 69.8323 | 326.7251 | 2645.14 | 1.82 | 53.43 | −16.43 |
| 330 | 245 | 69.6536 | 326.6184 | 2492.27 | 4.56 | 53.58 | −42.44 |
| 331 | 245 | 69.4750 | 326.5137 | 2341.71 | 7.16 | 53.74 | −39.81 |
| 332 | 245 | 69.2964 | 326.4109 | 2058.64 | 8.53 | 53.89 | −67.64 |
| 333 | 245 | 69.1179 | 326.3098 | 1846.83 | 84.24 | 54.03 | −65.50 |
| 334 | 245 | 68.9394 | 326.2104 | 1643.70 | 36.17 | 54.15 | 94.18 |
| 335 | 245 | 68.7609 | 326.1130 | 1587.85 | 49.64 | 54.23 | −52.70 |
| 336 | 245 | 68.5825 | 326.0171 | 2151.81 | 25.56 | 54.30 | −55.29 |
| 337 | 245 | 68.4041 | 325.9226 | 2499.76 | 81.76 | 54.36 | −33.06 |
| 338 | 245 | 68.2258 | 325.8301 | 2434.08 | 23.51 | 54.43 | −13.16 |
| 339 | 245 | 68.0475 | 325.7398 | 2365.89 | 50.70 | 54.49 | −148.56 |
| 340 | 245 | 67.8693 | 325.6492 | 1428.65 | 355.60 | 54.50 | −104.87 |
| 341 | 245 | 67.6912 | 325.5608 | 1227.72 | 23.13 | 54.49 | −73.21 |
| 342 | 245 | 67.5131 | 325.4741 | 1639.23 | 90.49 | 54.48 | −52.25 |
| 343 | 245 | 67.3351 | 325.3887 | 1523.45 | 52.71 | 54.47 | −65.63 |
| 344 | 245 | 67.1571 | 325.3047 | 1003.43 | 30.92 | 54.46 | −342.12 |
| 345 | 245 | 66.9792 | 325.2222 | 1298.28 | 4.30 | 54.44 | 148.86 |
| 346 | 245 | 66.8013 | 325.1406 | 1486.63 | 38.15 | 54.37 | 2486.63 |
| 316 | 246 | 72.1130 | 328.8911 | 2582.10 | 11.35 | 50.46 | −60.88 |
| 317 | 246 | 71.9347 | 328.7490 | 2485.08 | 30.28 | 50.78 | −23.17 |
| 318 | 246 | 71.7563 | 328.6096 | 2436.21 | 15.10 | 51.10 | −26.21 |
| 319 | 246 | 71.5780 | 328.4731 | 2525.34 | 11.55 | 51.40 | −23.68 |
| 320 | 246 | 71.3996 | 328.3391 | 2575.25 | 8.73 | 51.71 | −11.65 |
| 321 | 246 | 71.2212 | 328.2078 | 2647.65 | 7.52 | 52.01 | −3.21 |
| 322 | 246 | 71.0428 | 328.0791 | 2672.24 | 3.50 | 52.30 | −5.16 |
| 323 | 246 | 70.8645 | 327.9526 | 2684.88 | 8.35 | 52.56 | −4.21 |
| 324 | 246 | 70.6861 | 327.8286 | 2735.14 | 11.84 | 52.81 | −10.40 |
| 325 | 246 | 70.5077 | 327.7070 | 2772.77 | 4.67 | 53.05 | −6.64 |
| 326 | 246 | 70.3294 | 327.5876 | 2810.62 | 1.24 | 53.28 | −2.92 |
| 327 | 246 | 70.1510 | 327.4705 | 2787.84 | 1.34 | 53.52 | −3.98 |
| 328 | 246 | 69.9727 | 327.3552 | 2735.40 | 1.95 | 53.74 | −5.98 |
| 329 | 246 | 69.7944 | 327.2422 | 2634.98 | 5.45 | 53.91 | −18.40 |
| 330 | 246 | 69.6161 | 327.1311 | 2515.24 | 4.66 | 54.07 | −17.92 |
| 331 | 246 | 69.4378 | 327.0222 | 2324.85 | 17.52 | 54.24 | −47.41 |
| 332 | 246 | 69.2596 | 326.9150 | 1977.64 | 48.97 | 54.39 | −59.13 |
| 333 | 246 | 69.0814 | 326.8098 | 1589.22 | 12.87 | 54.55 | 116.58 |
| 334 | 246 | 68.9032 | 326.7063 | 1266.68 | 50.90 | 54.66 | −14.60 |
| 335 | 246 | 68.7251 | 326.6047 | 1218.43 | 33.06 | 54.74 | 19.05 |
| 336 | 246 | 68.5470 | 326.5046 | 1921.78 | 23.72 | 54.81 | 116.51 |
| 337 | 246 | 68.3690 | 326.4065 | 2091.44 | 22.54 | 54.88 | −61.78 |
| 338 | 246 | 68.1910 | 326.3098 | 1916.50 | 35.28 | 54.96 | −56.72 |
| 339 | 246 | 68.0130 | 326.2148 | 1702.62 | 46.05 | 55.02 | −94.75 |
| 340 | 246 | 67.8351 | 326.1213 | 860.86 | 16.28 | 55.03 | −165.14 |
| 341 | 246 | 67.6573 | 326.0293 | 835.66 | 408.04 | 55.03 | −76.72 |
| 342 | 246 | 67.4794 | 325.9390 | 838.51 | 16.39 | 55.02 | −40.29 |
| 343 | 246 | 67.3017 | 325.8501 | 891.39 | 73.95 | 55.01 | −45.57 |
| 344 | 246 | 67.1240 | 325.7625 | 1026.00 | 91.06 | 55.00 | −94.81 |
| 345 | 246 | 66.9464 | 325.6763 | 1152.00 | 21.78 | 54.9 | −181.97 |
| 315 | 247 | 72.2458 | 329.6208 | 2256.07 | 35.17 | 50.4 | −195.03 |
| 316 | 247 | 72.0680 | 329.4702 | 2440.63 | 45.87 | 50.82 | 71.48 |
| 317 | 247 | 71.8902 | 329.3225 | 2066.18 | 35.20 | 51.16 | 278.80 |
| 318 | 247 | 71.7123 | 329.1780 | 2171.28 | 26.51 | 51.49 | −103.31 |
| 319 | 247 | 71.5344 | 329.0361 | 2364.98 | 11.49 | 51.81 | −4.13 |
| 320 | 247 | 71.3564 | 328.8970 | 2494.50 | 9.11 | 52.12 | −2.55 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 321 | 247 | 71.1785 | 328.7607 | 2555.60 | 9.69 | 52.43 | −3.47 |
| 322 | 247 | 71.0005 | 328.6270 | 2582.10 | 3.66 | 52.73 | −6.22 |
| 323 | 247 | 70.8226 | 328.4956 | 2587.25 | 11.46 | 52.99 | −9.75 |
| 324 | 247 | 70.6446 | 328.3667 | 2641.97 | 8.69 | 53.25 | −19.42 |
| 325 | 247 | 70.4667 | 328.2405 | 2686.39 | 5.10 | 53.50 | −16.99 |
| 326 | 247 | 70.2887 | 328.1162 | 2773.11 | 10.76 | 53.75 | 41.41 |
| 327 | 247 | 70.1107 | 327.9944 | 2723.54 | 3.17 | 54.00 | −3.19 |
| 328 | 247 | 69.9328 | 327.8750 | 2685.24 | 2.33 | 54.21 | −10.89 |
| 329 | 247 | 69.7549 | 327.7573 | 2620.99 | 1.97 | 54.38 | −9.56 |
| 330 | 247 | 69.5770 | 327.6421 | 2532.39 | 5.06 | 54.56 | −18.25 |
| 331 | 247 | 69.3991 | 327.5286 | 2336.50 | 30.91 | 54.72 | −72.66 |
| 332 | 247 | 69.2212 | 327.4172 | 2042.88 | 8.74 | 54.89 | −69.20 |
| 333 | 247 | 69.0434 | 327.3079 | 1908.32 | 29.52 | 55.05 | −47.35 |
| 334 | 247 | 68.8656 | 327.2004 | 1462.02 | 29.79 | 55.16 | 91.60 |
| 335 | 247 | 68.6878 | 327.0947 | 1540.78 | 40.76 | 55.25 | −308.71 |
| 336 | 247 | 68.5100 | 326.9907 | 1515.62 | 62.93 | 55.33 | 123.10 |
| 337 | 247 | 68.3323 | 326.8884 | 1212.97 | 78.16 | 55.41 | 159.81 |
| 338 | 247 | 68.1546 | 326.7881 | 1164.04 | 44.73 | 55.48 | −104.62 |
| 339 | 247 | 67.9770 | 326.6892 | 760.36 | 35.46 | 55.55 | −148.74 |
| 340 | 247 | 67.7994 | 326.5920 | 719.16 | 39.61 | 55.55 | −113.46 |
| 341 | 247 | 67.6219 | 326.4963 | 455.25 | 44.56 | 55.55 | −52.39 |
| 342 | 247 | 67.4444 | 326.4023 | 911.74 | 43.56 | 55.55 | −24.82 |
| 343 | 247 | 67.2669 | 326.3098 | 447.06 | 75.96 | 55.55 | −177.93 |
| 344 | 247 | 67.0896 | 326.2187 | 1165.46 | 48.96 | 55.54 | −49.76 |
| 345 | 247 | 66.9122 | 326.1292 | 1340.58 | 45.04 | 55.51 | 2340.58 |
| 315 | 248 | 72.1986 | 330.2024 | 1859.12 | 22.17 | 50.83 | 202.17 |
| 316 | 248 | 72.0212 | 330.0464 | 1623.12 | 93.82 | 51.19 | 28.15 |
| 317 | 248 | 71.8439 | 329.8933 | 1512.66 | 36.17 | 51.53 | −263.12 |
| 318 | 248 | 71.6665 | 329.7434 | 1640.87 | 45.31 | 51.87 | −16.77 |
| 319 | 248 | 71.4890 | 329.5964 | 1995.87 | 97.03 | 52.19 | −78.78 |
| 320 | 248 | 71.3116 | 329.4524 | 2445.32 | 840.16 | 52.52 | −0.61 |
| 321 | 248 | 71.1341 | 329.3110 | 2139.77 | 29.21 | 52.84 | −6.97 |
| 322 | 248 | 70.9566 | 329.1721 | 2419.13 | 16.16 | 53.14 | 45.02 |
| 323 | 248 | 70.7791 | 329.0361 | 2167.07 | 45.17 | 53.42 | −103.65 |
| 324 | 248 | 70.6015 | 328.9026 | 2431.02 | 7.86 | 53.68 | −29.26 |
| 325 | 248 | 70.4240 | 328.7715 | 2490.39 | 9.82 | 53.94 | −79.77 |
| 326 | 248 | 70.2464 | 328.6428 | 2560.40 | 10.68 | 54.20 | −31.22 |
| 327 | 248 | 70.0689 | 328.5164 | 2492.11 | 11.91 | 54.45 | −20.08 |
| 328 | 248 | 69.8913 | 328.3923 | 2513.40 | 45.91 | 54.67 | −22.84 |
| 329 | 248 | 69.7138 | 328.2705 | 2531.51 | 10.48 | 54.85 | −7.20 |
| 330 | 248 | 69.5363 | 328.1509 | 2469.47 | 60.68 | 55.03 | −23.87 |
| 331 | 248 | 69.3588 | 328.0332 | 2609.71 | 9.62 | 55.21 | −25.43 |
| 332 | 248 | 69.1813 | 327.9177 | 2502.07 | 98.45 | 55.39 | −94.21 |
| 333 | 248 | 69.0038 | 327.8042 | 2155.59 | 35.71 | 55.56 | −43.37 |
| 334 | 248 | 68.8263 | 327.6926 | 1938.54 | 23.57 | 55.65 | −83.39 |
| 335 | 248 | 68.6489 | 327.5828 | 1674.45 | 22.60 | 55.74 | −120.28 |
| 337 | 248 | 68.2941 | 327.3689 | 570.49 | 61.20 | 55.92 | −89.93 |
| 338 | 248 | 68.1168 | 327.2646 | 480.19 | 23.12 | 56.00 | −59.77 |
| 339 | 248 | 67.9395 | 327.1621 | 388.27 | 56.03 | 56.06 | −137.12 |
| 341 | 248 | 67.5851 | 326.9619 | −14.98 | 32.78 | 56.08 | 21.62 |
| 315 | 249 | 72.1495 | 330.7805 | 1171.24 | 41.98 | 51.18 | −456.92 |
| 316 | 249 | 71.9727 | 330.6194 | 1211.40 | 19.88 | 51.55 | 371.67 |
| 317 | 249 | 71.7958 | 330.4612 | 1079.92 | 33.04 | 51.90 | −217.73 |
| 318 | 249 | 71.6189 | 330.3059 | 1285.71 | 30.71 | 52.24 | −62.85 |
| 319 | 249 | 71.4420 | 330.1541 | 1508.43 | 18.22 | 52.58 | −163.97 |
| 320 | 249 | 71.2650 | 330.0049 | 2286.71 | 11.56 | 52.92 | −82.78 |
| 321 | 249 | 71.0880 | 329.8584 | 2161.82 | 52.42 | 53.25 | −68.59 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 322 | 249 | 70.9109 | 329.7148 | 1995.35 | 46.12 | 53.55 | −25.70 |
| 323 | 249 | 70.7338 | 329.5740 | 2128.15 | 29.30 | 53.83 | −28.25 |
| 324 | 249 | 70.5567 | 329.4358 | 2300.69 | 19.45 | 54.11 | 48.60 |
| 325 | 249 | 70.3796 | 329.3000 | 2110.34 | 32.17 | 54.38 | −62.15 |
| 326 | 249 | 70.2025 | 329.1670 | 2309.39 | 10.00 | 54.65 | −55.98 |
| 327 | 249 | 70.0254 | 239.0361 | 2246.47 | 12.23 | 54.91 | −36.70 |
| 328 | 249 | 69.8483 | 328.9077 | 2444.80 | 26.46 | 55.12 | −31.32 |
| 329 | 249 | 69.6711 | 328.7815 | 2414.89 | 14.85 | 55.31 | −19.07 |
| 330 | 249 | 69.4940 | 328.6575 | 2489.77 | 70.28 | 55.50 | −109.32 |
| 331 | 249 | 69.3169 | 328.5356 | 2641.28 | 27.28 | 55.69 | −20.02 |
| 332 | 249 | 69.1398 | 328.4160 | 2505.75 | 98.50 | 55.87 | −86.34 |
| 333 | 249 | 68.9627 | 328.2983 | 2163.99 | 13.14 | 56.03 | −132.74 |
| 334 | 249 | 68.7856 | 328.1829 | 1988.78 | 20.86 | 56.14 | −114.29 |
| 335 | 249 | 68.6086 | 328.0691 | 1280.28 | 35.20 | 56.24 | −133.49 |
| 336 | 249 | 68.4315 | 327.9575 | 900.60 | 17.52 | 56.34 | −136.24 |
| 339 | 249 | 67.9006 | 327.6333 | −93.25 | 13.47 | 56.56 | −99.54 |
| 315 | 250 | 72.0986 | 331.3557 | 1551.09 | 30.17 | 51.52 | 481.84 |
| 316 | 250 | 71.9224 | 331.1892 | 800.68 | 16.87 | 51.89 | 205.30 |
| 317 | 250 | 71.7460 | 331.0256 | 1028.62 | 31.06 | 52.26 | 250.26 |
| 318 | 250 | 71.5696 | 330.8655 | 1382.47 | 15.81 | 52.61 | −105.50 |
| 319 | 250 | 71.3932 | 330.7085 | 1615.95 | 23.76 | 52.96 | −101.99 |
| 320 | 250 | 71.2167 | 330.5544 | 1115.65 | 53.13 | 53.30 | 15.89 |
| 321 | 250 | 71.0401 | 330.4033 | 1182.90 | 61.16 | 53.64 | −450.83 |
| 322 | 250 | 70.8636 | 330.2549 | 1560.73 | 49.55 | 53.95 | −36.12 |
| 323 | 250 | 70.6870 | 330.1094 | 1514.02 | 10.07 | 54.24 | −31.77 |
| 324 | 250 | 70.5103 | 329.9666 | 1334.33 | 23.61 | 54.53 | −59.72 |
| 325 | 250 | 70.3337 | 329.8264 | 1462.51 | 46.29 | 54.81 | −35.70 |
| 326 | 250 | 70.1570 | 329.6887 | 1590.15 | 9.11 | 55.09 | −69.26 |
| 327 | 250 | 69.9803 | 329.5535 | 2032.33 | 45.27 | 55.35 | −78.03 |
| 328 | 250 | 69.8036 | 329.4207 | 2443.22 | 20.76 | 55.56 | −85.04 |
| 329 | 250 | 69.6269 | 329.2903 | 2393.10 | 30.75 | 55.76 | 3.90 |
| 330 | 250 | 69.4502 | 329.1621 | 2108.38 | 37.32 | 55.97 | 175.13 |
| 331 | 250 | 69 2735 | 329.0361 | 2218.99 | 28.14 | 56.16 | 3.78 |
| 332 | 250 | 69.0968 | 328.9124 | 2379.69 | 155.94 | 56.35 | −66.17 |
| 333 | 250 | 68.9201 | 328.7908 | 2219.68 | 21.04 | 56.50 | −208.89 |
| 334 | 250 | 68.7434 | 328.6711 | 1747.23 | 46.06 | 56.61 | 365.42 |
| 335 | 250 | 68.5667 | 328.5537 | 1308.50 | 70.81 | 56.72 | 20 55 |
| 336 | 250 | 68.3901 | 328.4380 | 500.19 | 53.86 | 56.82 | −364.20 |
| 315 | 251 | 72.0461 | 331.9275 | 718.34 | 29.97 | 51.86 | −122.29 |
| 316 | 251 | 71.8703 | 331.7556 | 916.18 | 10.27 | 52.23 | 738.46 |
| 317 | 251 | 71.6945 | 331.5872 | 1092.22 | 14.72 | 52.60 | 983.08 |
| 318 | 251 | 71.5186 | 331.4221 | 1073.39 | 15.74 | 52.97 | 407.58 |
| 319 | 251 | 71.3427 | 331.2600 | 1327.07 | 50.59 | 53.33 | −161.20 |
| 320 | 251 | 71.1667 | 331.1011 | 1060.38 | 18.52 | 53.69 | 71.69 |
| 321 | 251 | 70.9907 | 330.9453 | 1163.75 | 61.75 | 54.04 | −41.13 |
| 322 | 251 | 70.8146 | 330.7922 | 1161.70 | 18.51 | 54.34 | −64.87 |
| 323 | 251 | 70.6385 | 330.6421 | 825.59 | 61.09 | 54.64 | −134.14 |
| 324 | 251 | 70.4623 | 330.4946 | 883.89 | 16.54 | 54.94 | −77.56 |
| 325 | 251 | 70.2861 | 330.3501 | 1336.91 | 18.37 | 55.23 | −42.99 |
| 326 | 251 | 70.1099 | 330.2080 | 1837.05 | 30.93 | 55.52 | −86.59 |
| 327 | 251 | 69.9337 | 330.0684 | 2313.89 | 72.11 | 55.78 | −83.80 |
| 328 | 251 | 69.7574 | 329.9314 | 2298.17 | 21.44 | 56.00 | −0.90 |
| 329 | 251 | 69.5811 | 329.7966 | 2219.23 | 69.02 | 56.21 | −52.69 |
| 330 | 251 | 69.4048 | 329.6643 | 1803.95 | 27.19 | 56.41 | −88.94 |
| 331 | 251 | 69.2285 | 329.5344 | 1596.08 | 19.84 | 56.62 | −12.32 |
| 332 | 251 | 69.0523 | 329.4065 | 1820.39 | 61.67 | 56.82 | 167.96 |
| 333 | 251 | 68.8760 | 329.2810 | 1734.07 | 39.39 | 56.96 | 330.71 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 334 | 251 | 68.6997 | 329.1575 | 1064.50 | 93.72 | 57.08 | 60.69 |
| 335 | 251 | 68.5234 | 329.0361 | 637.04 | 24.32 | 57.20 | −210.93 |
| 336 | 251 | 68.3471 | 328.9167 | 9.63 | 57.57 | 57.31 | −272.30 |
| 314 | 252 | 72.1668 | 332.6760 | 1041.71 | 40.82 | 51.78 | 67.78 |
| 315 | 252 | 71.9917 | 332.4956 | 765.68 | 80.11 | 52.18 | −47.64 |
| 316 | 252 | 71.8165 | 332.3188 | 1631.11 | 39.09 | 52.57 | 391.96 |
| 317 | 252 | 71.6413 | 332.1455 | 1891.59 | 5.91 | 52.95 | 1854.55 |
| 318 | 252 | 71.4659 | 331.9753 | 1302.85 | 54.47 | 53.33 | 204.56 |
| 319 | 252 | 71.2905 | 331.8086 | 1328.58 | 29.79 | 53.69 | 13.17 |
| 320 | 252 | 71.1151 | 331.6450 | 896.33 | 12.29 | 54.05 | −85.97 |
| 321 | 252 | 70.9395 | 331.4844 | 1074.40 | 22.48 | 54.40 | −237.50 |
| 322 | 252 | 70.7640 | 331.3267 | 1059.00 | 11.01 | 54.72 | −55.37 |
| 323 | 252 | 70.5883 | 331.1721 | 530.33 | 24.02 | 55.03 | −175.38 |
| 324 | 252 | 70.4127 | 331.0203 | 440.99 | 14.36 | 55.34 | −86.61 |
| 325 | 252 | 70.2370 | 330.8711 | 590.53 | 31.46 | 55.64 | −75.51 |
| 326 | 252 | 70.0612 | 330.7246 | 2001.92 | 13.56 | 55.94 | −77.16 |
| 327 | 252 | 69.8854 | 330.5808 | 2382.83 | 48.11 | 56.19 | −73.81 |
| 328 | 252 | 69.7096 | 330.4395 | 2489.17 | 24.31 | 56.42 | −64.94 |
| 329 | 252 | 69.5338 | 330.3008 | 2271.21 | 58.59 | 56.64 | −55.59 |
| 330 | 252 | 69.3579 | 330.1643 | 2087.45 | 44.32 | 56.86 | −76.34 |
| 331 | 252 | 69.1821 | 330.0303 | 1645.19 | 65.21 | 57.08 | 25.85 |
| 332 | 252 | 69.0062 | 329.8987 | 1425.29 | 49.40 | 57.28 | −97.85 |
| 333 | 252 | 68.8303 | 329.7690 | 1007.39 | 25.31 | 57.42 | −100.22 |
| 334 | 252 | 68.6545 | 329.6418 | 904.06 | 37.06 | 57.54 | −123.78 |
| 335 | 252 | 68.4786 | 329.5166 | 511.38 | 41.35 | 57.66 | −72.11 |
| 336 | 252 | 68.3027 | 329.3936 | 99.12 | 21.95 | 57.78 | −38.66 |
| 314 | 253 | 72.1102 | 333.2458 | −98.24 | 53.90 | 52.09 | −496.62 |
| 315 | 253 | 71.9356 | 333.0603 | 1351.22 | 83.66 | 52.50 | −315.46 |
| 316 | 253 | 71.7610 | 332.8787 | 1267.69 | 5.39 | 52.89 | −618.04 |
| 319 | 253 | 71.2367 | 332.3540 | 1345.06 | 8.81 | 54.04 | 370.64 |
| 320 | 253 | 71.0618 | 332.1855 | 951.07 | 6.98 | 54.42 | −16.01 |
| 321 | 253 | 70.8868 | 332.0205 | 974.91 | 1.09 | 54.77 | −31.42 |
| 322 | 253 | 70.7117 | 331.8584 | 990.79 | 3.25 | 55.09 | −46.49 |
| 323 | 253 | 70.5366 | 331.6992 | 784.39 | 9.68 | 55.41 | −72.08 |
| 324 | 253 | 70.3614 | 331.5430 | 467.05 | 1.71 | 55.73 | −40.47 |
| 326 | 253 | 70.0109 | 331.2388 | 1778.40 | 18.24 | 56.35 | 63.54 |
| 327 | 253 | 69.8356 | 331.0906 | 2408.93 | 72.01 | 56.60 | −6.67 |
| 328 | 253 | 69.6603 | 330.9453 | 2416.65 | 84.12 | 56.84 | 21.49 |
| 329 | 253 | 69.4849 | 330.8025 | 2158.10 | 35.55 | 57.06 | −73.06 |
| 330 | 253 | 69.3095 | 330.6619 | 2180.93 | 82.96 | 57.29 | −147.06 |
| 331 | 253 | 69.1341 | 330.5239 | 1735.26 | 89.95 | 57.51 | −170.71 |
| 332 | 253 | 68.9587 | 330.3884 | 1676.70 | 95.42 | 57.71 | 281.97 |
| 333 | 253 | 68.7832 | 330.2549 | 1134.01 | 43.39 | 57.85 | −122.34 |
| 334 | 253 | 68.6078 | 330.1238 | 749.81 | 15.89 | 57.99 | −103.78 |
| 335 | 253 | 68.4323 | 329.9949 | 436.39 | 20.55 | 58.13 | 9.42 |
| 336 | 253 | 68.2569 | 329.8682 | 3.65 | 21.86 | 58.25 | 119.34 |
| 314 | 254 | 72.0518 | 333.8118 | 68.53 | 986.91 | 52.40 | 27.72 |
| 315 | 254 | 71.8779 | 333.6216 | 1612.06 | 13.92 | 52.81 | 415.90 |
| 316 | 254 | 71.7039 | 333.4348 | 1241.11 | 50.19 | 53.21 | −279.73 |
| 317 | 254 | 71.5297 | 333.2517 | 803.69 | 72.82 | 53.61 | 311.45 |
| 320 | 254 | 71.0069 | 332.7231 | 876.35 | 1.19 | 54.77 | −10.69 |
| 321 | 254 | 70.8324 | 332.5535 | 902.32 | 13.27 | 55.11 | −24.15 |
| 322 | 254 | 70.6579 | 332.3870 | 1058.74 | 9.93 | 55.45 | −56.25 |
| 323 | 254 | 70.4832 | 332.2234 | 607.14 | 5.10 | 55.78 | −61.77 |
| 324 | 254 | 70.3086 | 332.0627 | 401.44 | 2.15 | 56.11 | −143.34 |
| 325 | 254 | 70.1339 | 331.9050 | 436.07 | 31.03 | 56.44 | 196.75 |
| 326 | 254 | 69.9591 | 331.7502 | 1154.26 | 94.57 | 56.73 | 26.57 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 327 | 254 | 69.7843 | 331.5979 | 2030.57 | 78.45 | 56.98 | 254.84 |
| 328 | 254 | 69.6094 | 331.4485 | 2526.06 | 34.48 | 57.23 | 209.81 |
| 329 | 254 | 69.4345 | 331.3015 | 2349.64 | 48.70 | 57.47 | −118.24 |
| 330 | 254 | 69.2596 | 331.1572 | 2172.33 | 30.51 | 57.71 | −128.98 |
| 331 | 254 | 69.0846 | 331.0154 | 1542.25 | 19.18 | 57.95 | −153.44 |
| 332 | 254 | 68.9097 | 330.8757 | 1241.00 | 14.07 | 58.14 | 142.32 |
| 333 | 254 | 68.7346 | 330.7388 | 991.51 | 22.81 | 58.28 | −103.32 |
| 334 | 254 | 68.5596 | 330.6038 | 651.80 | 10.32 | 58.43 | −56.08 |
| 335 | 254 | 68.3846 | 330.4712 | 320.97 | 6.29 | 58.57 | 25.60 |
| 313 | 255 | 72.1649 | 334.5730 | 1595.24 | 107.00 | 52.26 | 80.03 |
| 314 | 255 | 71.9917 | 334.3740 | 987.42 | 57.36 | 52.69 | 675.68 |
| 315 | 255 | 71.8184 | 334.1790 | 805.16 | 59.36 | 53.11 | −31.45 |
| 316 | 255 | 71.6450 | 333.9875 | 812.41 | 47.42 | 53.52 | −130.75 |
| 317 | 255 | 71.4715 | 333.7998 | 691.95 | 20.73 | 53.93 | 479.23 |
| 320 | 255 | 70.9503 | 333.2573 | 570.55 | 14.69 | 55.11 | −37.90 |
| 321 | 255 | 70.7764 | 333.0833 | 879.28 | 88.62 | 55.46 | 246.17 |
| 322 | 255 | 70.6024 | 332.9124 | 696.41 | 49.96 | 55.81 | −38.28 |
| 323 | 255 | 70.4283 | 332.7446 | 287.70 | 17.69 | 56.14 | −68.85 |
| 324 | 255 | 70.2542 | 332.5798 | 945.24 | 9.00 | 56.48 | 324.81 |
| 325 | 255 | 70.0800 | 332.4180 | 550.43 | 15.12 | 56.81 | 1550.43 |
| 326 | 255 | 69.9057 | 332.2588 | 1333.84 | 10.77 | 57.10 | 883.21 |
| 327 | 255 | 69.7314 | 332.1025 | 1701.47 | 8.32 | 57.37 | −147.76 |
| 328 | 255 | 69.5570 | 331.9492 | 1988.86 | 56.37 | 57.63 | −97.54 |
| 329 | 255 | 69.3826 | 331.7983 | 2367.60 | 17.08 | 57.88 | −435.12 |
| 330 | 255 | 69.2082 | 331.6499 | 2519.57 | 34.71 | 58.12 | −38.71 |
| 331 | 255 | 69.0337 | 331.5042 | 1593.62 | 27.05 | 58.36 | −1.91 |
| 332 | 255 | 68.8591 | 331.3608 | 1187.04 | 71.40 | 58.54 | −17.68 |
| 333 | 255 | 68.6846 | 331.2200 | 951.51 | 20.32 | 58.70 | −67.04 |
| 334 | 255 | 68.5100 | 331.0815 | 563.92 | 6.62 | 58.86 | −33.23 |
| 312 | 256 | 72.2749 | 335.3440 | 984.63 | 69.75 | 52.10 | −248.91 |
| 313 | 256 | 72.1025 | 335.1362 | 1226.63 | 115.66 | 52.55 | −148.79 |
| 314 | 256 | 71.9299 | 334.9324 | 1052.09 | 59.46 | 52.98 | −80.90 |
| 315 | 256 | 71.7573 | 334.7327 | 726.43 | 40.10 | 53.40 | −108.76 |
| 316 | 256 | 71.5845 | 334.5366 | 561.86 | 13.45 | 53.82 | −99.75 |
| 317 | 256 | 71.4116 | 334.3442 | 610.77 | 7.36 | 54.23 | 185.65 |
| 320 | 256 | 70.8921 | 333.7886 | 372.54 | 40.06 | 55.43 | 63.34 |
| 321 | 256 | 70.7188 | 333.6101 | 164.83 | 622.61 | 55.79 | 26.35 |
| 322 | 256 | 70.5453 | 333.4348 | 271.69 | 50.20 | 56.14 | −151.92 |
| 323 | 256 | 70.3718 | 333.2627 | 679.93 | 8.96 | 56.49 | −70.47 |
| 325 | 256 | 70.0246 | 332.9277 | 986.32 | 3.55 | 57.18 | 498.35 |
| 326 | 256 | 69.8508 | 322.6546 | 1283.79 | 4.09 | 57.46 | 152.13 |
| 327 | 256 | 69.6770 | 332.6045 | 1676.27 | 12.50 | 57.73 | −109.60 |
| 328 | 256 | 69.5031 | 332.4470 | 2096.75 | 34.42 | 58.00 | −18.43 |
| 329 | 256 | 69.3292 | 332.2922 | 2277.98 | 12.13 | 58.26 | −77.27 |
| 330 | 256 | 69.1552 | 332.1401 | 2696.35 | 11.81 | 58.52 | −113.48 |
| 331 | 256 | 68.9812 | 331.9907 | 1873.23 | 26.62 | 58.77 | −380.01 |
| 332 | 256 | 68.8072 | 331.8437 | 925.50 | 24.15 | 58.94 | −210.27 |
| 333 | 256 | 68.6331 | 331.6992 | 572.56 | 24.25 | 59.10 | −94.05 |
| 334 | 256 | 68.4590 | 331.5569 | 290.58 | 43.02 | 59.26 | −56.62 |
| 312 | 257 | 72.2101 | 335.9080 | 89.70 | 29.84 | 52.38 | 104.66 |
| 313 | 257 | 72.0384 | 335.6953 | 583.09 | 69.85 | 52.82 | −28.86 |
| 314 | 257 | 71.8665 | 335.4868 | 854.80 | 95.38 | 53.25 | 216.12 |
| 315 | 257 | 71.6945 | 335.2825 | 753.26 | 45.35 | 53.68 | 201.13 |
| 316 | 257 | 71.5223 | 335.0818 | 399.31 | 10.68 | 54.11 | 283.50 |
| 317 | 257 | 71.3500 | 334.8850 | 599.62 | 36.79 | 54.53 | −109.20 |
| 318 | 257 | 71.1776 | 334.6919 | 189.91 | 8.99 | 54.95 | −92.04 |
| 320 | 257 | 70.8324 | 334.3162 | 328.28 | 11.40 | 55.74 | −139.68 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 321 | 257 | 70.6596 | 334.1335 | 114.08 | 31.36 | 56.11 | −182.92 |
| 322 | 257 | 70.4867 | 333.9541 | 373.42 | 12.30 | 56.47 | −82.63 |
| 323 | 257 | 70.3138 | 333.7778 | 423.00 | 9.75 | 56.83 | −44.66 |
| 325 | 357 | 69.9676 | 333.4348 | 976.71 | 14.11 | 57.52 | −37.20 |
| 326 | 257 | 69.7944 | 333.2678 | 1321.00 | 27.50 | 57.81 | −160.89 |
| 327 | 257 | 69.6211 | 333.1038 | 1775.00 | 14.87 | 58.09 | −120.64 |
| 328 | 257 | 69.4477 | 332.9424 | 2073.24 | 20.02 | 58.37 | −66.59 |
| 329 | 257 | 69.2743 | 332.7837 | 2137.44 | 19.51 | 58.64 | −96.27 |
| 330 | 257 | 69.1008 | 332.6279 | 1865.23 | 13.60 | 58.90 | −135.93 |
| 331 | 257 | 68.9273 | 332.4746 | 1679.97 | 30.80 | 59.13 | −29.68 |
| 332 | 257 | 68.7538 | 332.3240 | 797.26 | 181.15 | 59.31 | −102.23 |
| 333 | 257 | 68.5801 | 332.1758 | 358.85 | 38.93 | 59.49 | −94.59 |
| 313 | 258 | 71.9727 | 336.2505 | −60.91 | 44.68 | 53.09 | −119.09 |
| 314 | 258 | 71.8015 | 336.0374 | 87.88 | 23.34 | 53.53 | 3.72 |
| 315 | 258 | 71.6301 | 335.8284 | 108.68 | 45.73 | 53.96 | −146.46 |
| 316 | 258 | 71.4586 | 335.6233 | 244.17 | 14.15 | 54.39 | −23.59 |
| 317 | 258 | 71.2869 | 335.4221 | 248.86 | 9.73 | 54.82 | −99.75 |
| 318 | 258 | 71.1151 | 335.2249 | 55.07 | 6.06 | 55.24 | 24.29 |
| 319 | 258 | 70.9431 | 335.0310 | 158.21 | 1.56 | 55.66 | −49.88 |
| 322 | 258 | 70.4266 | 334.4702 | 699.93 | 1.45 | 56.78 | −121.39 |
| 324 | 258 | 70.0817 | 334.1128 | 829.97 | 23.70 | 57.52 | −97.32 |
| 325 | 258 | 69.9091 | 333.9390 | 824.14 | 3.19 | 57.85 | −47.95 |
| 326 | 258 | 69.7364 | 333.7678 | 1191.95 | 27.57 | 58.14 | −73.81 |
| 327 | 258 | 69.5637 | 333.5999 | 1340.48 | 42.56 | 58.43 | −62.05 |
| 328 | 258 | 69.3908 | 333.4348 | 1455.15 | 50.15 | 58.71 | −120.83 |
| 329 | 258 | 69.2179 | 333.2725 | 1047.90 | 81.97 | 59.00 | −555.34 |
| 330 | 258 | 69.0450 | 333.1130 | 1056.77 | 31.46 | 59.28 | −123.56 |
| 331 | 258 | 68.8720 | 332.9561 | 130.41 | 29.82 | 59.49 | −98.60 |
| 314 | 259 | 71.7348 | 336.5837 | 129.85 | 20.99 | 53.78 | −49.26 |
| 315 | 259 | 71.5641 | 336.3706 | 296.91 | 12.56 | 54.22 | −60.49 |
| 316 | 259 | 71.3932 | 336.1611 | 386.30 | 25.14 | 54.66 | −88.70 |
| 317 | 259 | 71.2221 | 335.9556 | 156.41 | 55.20 | 55.10 | −40.96 |
| 318 | 259 | 71.0510 | 335.7539 | 47.00 | 24.29 | 55.53 | −23.78 |
| 319 | 259 | 70.8796 | 335.5559 | −113.31 | 9.28 | 55.93 | 36.65 |
| 323 | 259 | 70.1931 | 334.7988 | 1161.46 | 10.09 | 57.46 | −191.83 |
| 324 | 259 | 70.0211 | 334.6177 | 1025.64 | 10.78 | 57.83 | −112.96 |
| 325 | 259 | 69.8491 | 334.4399 | 1007.54 | 12.78 | 58.15 | −24.64 |
| 326 | 259 | 69.6770 | 334.2651 | 981.23 | 45.94 | 58.46 | −6.42 |
| 327 | 259 | 69.5048 | 334.0933 | 1114.08 | 75.32 | 58.76 | −147.86 |
| 328 | 259 | 69.3325 | 333.9246 | 746.97 | 45.44 | 59.06 | −1.57 |
| 329 | 259 | 69.1601 | 333.7585 | 833.30 | 26.01 | 59.34 | −1181.29 |
| 315 | 260 | 71.4964 | 336.9087 | 4.84 | 44.94 | 54.48 | −108.37 |
| 316 | 260 | 71.3262 | 336.6951 | 270.42 | 33.21 | 54.92 | −142.17 |
| 317 | 260 | 71.1558 | 336.4854 | 312.89 | 99.96 | 55.36 | −18.79 |
| 318 | 260 | 70.9853 | 336.2795 | 488.89 | 66.61 | 55.80 | 412.58 |
| 319 | 260 | 70.8146 | 336.0774 | 35.20 | 5.52 | 56.20 | −50.58 |
| 324 | 260 | 69.9591 | 335.1196 | 1155.44 | 6.15 | 58.13 | −112.21 |
| 325 | 260 | 69.7876 | 334.9380 | 1017.19 | 2.80 | 58.45 | −82.48 |
| 326 | 260 | 69.6161 | 334.7593 | 661.35 | 82.52 | 58.76 | −146.46 |
| 327 | 260 | 69.4444 | 334.5840 | 443.15 | 45.74 | 59.06 | −156.87 |
| 328 | 260 | 69.2727 | 334.4114 | 1064.48 | 12.22 | 59.37 | 550.54 |
| 329 | 260 | 69.1008 | 334.2417 | 184.19 | 9.91 | 59.67 | −32.76 |
| 315 | 261 | 71.4272 | 337.4426 | 91.65 | 25.24 | 54.72 | −72.92 |
| 316 | 261 | 71.2577 | 337.2249 | 88.45 | 37.99 | 55.17 | −6.44 |
| 317 | 261 | 71.0880 | 337.0112 | 224.67 | 51.03 | 55.62 | −17.37 |
| 318 | 261 | 70.9181 | 336.8013 | 247.90 | 17.23 | 56.04 | −131.85 |
| 319 | 261 | 70.7480 | 336.5952 | 114.37 | 4.30 | 56.45 | −81.09 |

Table 1 (Continued)

| I | J | NORTH LATITUDE | EAST LONGITUDE | ELEVATION (M) | SIGMA (M) | GEM10-B GEOID (M) | DELTA SLOPE CORRECTION (M) |
|---|---|---|---|---|---|---|---|
| 324 | 261 | 69.8956 | 335.6182 | 654.07 | 13.42 | 58.39 | 1654.07 |
| 325 | 261 | 69.7247 | 335.4326 | 781.47 | 2.69 | 58.72 | −95.89 |
| 326 | 261 | 69.5537 | 335.2505 | 269.46 | 13.41 | 59.04 | −179.94 |
| 327 | 261 | 69.3826 | 335.0713 | 164.00 | 18.24 | 59.37 | −357.47 |
| 328 | 261 | 69.2114 | 334.8953 | −28.75 | 55.93 | 59.68 | 971.25 |
| 315 | 262 | 71.3564 | 337.9727 | 325.29 | 35.66 | 54.96 | 14.35 |
| 316 | 262 | 71.1876 | 337.7510 | 491.90 | 95.32 | 55.41 | 201.57 |
| 317 | 262 | 71.0185 | 337.5332 | 169.46 | 74.70 | 55.86 | −130.98 |
| 318 | 262 | 70.8493 | 337.3193 | 321.36 | 26.71 | 56.28 | 184.30 |
| 319 | 262 | 70.6799 | 337.1094 | 198.89 | 3.56 | 56.69 | −71.37 |
| 316 | 263 | 71.1160 | 338.2727 | 430.56 | 24.90 | 55.63 | −1.54 |
| 317 | 263 | 70.9476 | 338.0513 | 542.83 | 36.94 | 56.08 | 49.05 |
| 318 | 263 | 70.7791 | 337.8335 | 376.06 | 17.04 | 56.50 | 111.81 |

Table 2

Comparisons of surface elevations measured by Seasat and geoceiver at sites occupied by Mock (1976).

| GEOCEIVER SITE (DATE) | LATITUDE (deg) | LONGITUDE (deg) | SEASAT ELEVATION* (m) | GEOCEIVER ELEVATION+ (m) published | GEOCEIVER ELEVATION* (m) corrected # | DIFFERENCE (m) (SEASAT-GEOCEIVER) |
|---|---|---|---|---|---|---|
| CRETE (1972) | 71.1204 | 322.6837 | 3222.64 | 3214.14 | 3220.67 | 1.97 |
| DYE-3 (1972) | 65.1874 | 316.1695 | 2515.00 | 2517.38 | 2523.95 | –8.95 |
| DYE-3 (1973) | 65.1831 | 316.1740 | 2515.31 | 2525.18 | 2531.74 | –16.43 |
| DYE-3 (1975) | 65.1860 | 316.1744 | 2514.42 | 2523.75 | 2530.31 | –15.89 |
| SOUTH DOME (1975) | 63.5459 | 315.4010 | 2871.12 | 2861.43 | 2868.01 | 3.11 |
| SADDLE SOUTH (1975) | 65.6703 | 315.6851 | 2539.02 | 2536.71 | 2543.37 | –4.25 |
| SADDLE NORTH (1975) | 66.1921 | 316.3378 | 2534.78 | 2534.14 | 2540.70 | –5.92 |
| A1 (1975) | 67.4551 | 318.0195 | 2583.16 | 2575.94 | 2582.49 | 0.67 |
| | | | | | mean = | –5.71 ± 7.64 |

* referred to IUGG-77 ellipsoid

\+ referred to NWL-9D ellipsoid

\# corrections included: 1) height of electrical center of antenna above surface (subtract an estimated height of 1.0 meter)
2) transformation to IUGG-77 ellipsoid from NWL-9D ellipsoid (add from 7.53 to 7.58 meters)

Table 3

Comparison of surface elevations measured by Seasat and geoceiver at sites occupied by Ohio State University (OSU) (Drew,1983).

| GEOCEIVER SITE (DATE) | LATITUDE (deg) | LONGITUDE (deg) | SEASAT ELEVATION* (m) | GEOCEIVER ELEVATION+ (m) published | GEOCEIVER ELEVATION* (m) corrected # | DIFFERENCE (m) (SEASAT-GEOCEIVER) |
|---|---|---|---|---|---|---|
| WC1001 | 65.3876 | 312.3270 | 2026.35 | 2022.08 | 2029.64 | –3.29 |
| WC1002 | 65.3867 | 312.7621 | 2175.14 | 2163.52 | 2171.08 | 4.06 |
| WC1003 | 65.2370 | 312.5398 | 2130.08 | 2126.08 | 2133.64 | –3.56 |
| WC1004 | 65.2423 | 312.1291 | 2007.93 | 1988.80 | 1996.36 | 11.57 |
| WC1005 | 65.3904 | 311.8903 | 1889.90 | 1860.16 | 1867.72 | 22.18 |
| WC1006 | 65.5468 | 312.1045 | 1915.80 | 1904.54 | 1912.10 | 3.70 |
| WC1007 | 65.5399 | 312.5373 | 2063.12 | 2025.62 | 2033.18 | 29.94 |
| CC2001 | 65.1082 | 314.3132 | 2523.53 | 2518.72 | 2526.28 | –2.75 |
| CC2002 | 65.0672 | 314.7129 | 2589.50 | 2586.13 | 2593.70 | –4.20 |
| CC2003 | 64.9328 | 314.4033 | 2573.53 | 2566.12 | 2573.69 | –0.16 |
| CC2004 | 64.9815 | 313.9736 | 2472.55 | 2485.04 | 2492.61 | –20.06 |
| CC2005 | 65.1491 | 313.8966 | 2447.06 | 2441.96 | 2449.52 | –2.46 |
| CC2006 | 65.2929 | 314.1659 | 2466.94 | 2456.72 | 2464.28 | 2.66 |
| CC2007 | 65.2468 | 314.5911 | 2531.24 | 2529.63 | 2537.20 | –5.96 |
| EC3001 | 65.2589 | 316.5328 | 2416.67 | 2414.35 | 2421.91 | –5.24 |
| EC3002 | 65.1062 | 316.5344 | 2453.02 | 2474.59 | 2482.16 | –29.14 |
| EC3003 | 65.2015 | 316.1597 | 2513.14 | 2522.35 | 2529.91 | –16.77 |
| EC3004 | 65.0255 | 316.1519 | 2568.41 | 2555.62 | 2563.19 | 5.22 |
| EC3005 | 65.1187 | 315.8020 | 2601.00 | 2590.89 | 2598.46 | 2.54 |
| EC3006 | 64.9265 | 315.8201 | 2660.22 | 2648.16 | 2655.72 | 4.50 |
| EC3007 | 65.0141 | 315.3566 | 2665.08 | 2665.58 | 2673.15 | –8.07 |
| EC3008 | 64.8498 | 315.3467 | 2704.43 | 2700.68 | 2708.25 | –3.82 |
| | | | | | mean = | –0.87 ± 12.39 |

* referred to IUGG-77 ellipsoid

\+ referred to WGS-66 ellipsoid

\# correction transforms reference ellipsoid from WGS-66 to IUGG-77 (add from 7.56 to 7.57 meters)

Table 4

Comparison of surface elevations near Crete Station measured by Seasat and geoceiver at sites occupied by Danes (Gundestrup, personal communication).

| GEOCEIVER SITE (DATE) | LATITUDE (deg) | LONGITUDE (deg) | SEASAT ELEVATION* (m) | GEOCEIVER ELEVATION+ (m) published | GEOCEIVER ELEVATION* (m) corrected # | DIFFERENCE (m) (SEASAT-GEOCEIVER) |
|---|---|---|---|---|---|---|
| A | 70.6349 | 324.1800 | 3140.78 | 3145.28 | 3142.48 | –1.70 |
| B | 70.6508 | 322.5212 | 3183.70 | 3190.80 | 3188.00 | –4.30 |
| D | 70.6398 | 320.3822 | 3059.21 | 3068.12 | 3065.32 | –6.11 |
| E | 71.7593 | 324.1495 | 3127.80 | 3137.54 | 3134.74 | –6.94 |
| F | 71.4920 | 324.1188 | 3137.25 | 3143.40 | 3140.60 | –3.35 |
| G | 71.1550 | 324.1623 | 3146.65 | 3150.48 | 3147.68 | –1.03 |
| H | 70.8651 | 324.1619 | 3151.12 | 3158.10 | 3155.30 | –4.18 |
| | | | | | | mean = –3.94 ±2.15 |

* referred to IUGG-77 ellipsoid and calculated from 5-kilometer grid of region around Crete Station (Map 14)

\+ referred to WGS-72 ellipsoid

\# corrections include: 1) height of antenna above surface (subtract an estimated height of 1.0 meter)
2) transformation to IUGG-77 ellipsoid from WGS-72 ellipsoid (subtract 1.80 meter)

Table 5

Comparison of surface elevations by Seasat and optical survey along EGIG line.

| EGIG SITE | LATITUDE (deg) | LONGITUDE (deg) | SEASAT ELEVATION* (m) | GEM-10B GEOID (m) | EGIG ELEVATION+ (m) | DIFFERENCE (m) (SEASAT-EGIG) |
|---|---|---|---|---|---|---|
| T301 | 69.7274 | 311.7027 | 1612.78 | 37.76 | 1576.27 | 36.51 |
| TA | 69.7380 | 311.9276 | 1687.50 | 38.05 | 1652.11 | 35.39 |
| T 1 | 69.7405 | 311.9435 | 1693.36 | 38.07 | 1665.10 | 28.26 |
| T 2 | 69.7597 | 312.1411 | 1755.13 | 38.31 | 1729.20 | 25.93 |
| T 3 | 69.7880 | 312.3502 | 1808.40 | 38.56 | 1802.40 | 6.00 |
| T 4 | 69.8237 | 312.5676 | 1860.00 | 38.82 | 1847.09 | 12.92 |
| T 5 | 69.8526 | 312.7438 | 1898.68 | 39.02 | 1901.54 | –2.86 |
| T 6 | 69.8982 | 312.9878 | 1960.86 | 39.30 | 1964.55 | –3.96 |
| T 7 | 69.9434 | 313.1932 | 2018.40 | 39.53 | 2008.42 | 9.98 |
| T 8 | 69.9718 | 313.3881 | 2058.30 | 39.75 | 2059.56 | –1.26 |
| T 9 | 70.0216 | 313.6884 | 2093.12 | 40.08 | 2111.61 | –18.49 |
| T 10 | 70.0662 | 313.9920 | 2151.94 | 40.42 | 2174.95 | –23.01 |
| T 11 | 70.1093 | 314.2419 | 2223.11 | 40.68 | 2239.78 | –16.67 |
| T 11A | 70.1406 | 314.4325 | 2267.28 | 40.88 | 2271.25 | –3.97 |
| T 12 | 70.1768 | 314.6508 | 2314.74 | 41.11 | 2306.01 | 8.73 |
| T 13 | 70.2366 | 315.0109 | 2360.96 | 41.49 | 2374.66 | –13.70 |
| T 14 | 70.2748 | 315.2383 | 2415.34 | 41.71 | 2420.75 | –5.41 |
| TA 15 | 70.3059 | 315.4167 | 2449.98 | 41.89 | 2449.14 | 0.84 |
| T 16 | 70.3409 | 315.6588 | 2483.17 | 42.13 | 2493.30 | –10.13 |
| T 17 | 70.3770 | 315.8879 | 2527.95 | 42.36 | 2532.25 | –4.30 |
| T 18 | 70.4312 | 316.1979 | 2582.06 | 42.66 | 2580.60 | 1.46 |
| T 19 | 70.4742 | 316.4592 | 2623.07 | 42.90 | 2621.52 | 1.55 |
| T 20 | 70.5088 | 316.6990 | 2657.56 | 43.13 | 2662.58 | –5.02 |
| T 21 | 70.5460 | 316.9677 | 2689.60 | 43.39 | 2695.48 | –5.88 |
| T 22 | 70.5871 | 317.1988 | 2719.58 | 43.60 | 2721.23 | –1.65 |
| T 23 | 70.6277 | 317.4427 | 2754.57 | 43.81 | 2753.53 | 1.04 |
| T 24 | 70.6668 | 317.7201 | 2788.67 | 44.07 | 2791.58 | –2.91 |
| T 25 | 70.7051 | 317.9544 | 2816.18 | 44.31 | 2823.94 | –7.76 |
| T 26 | 70.7398 | 318.2192 | 2840.14 | 44.51 | 2847.45 | –7.31 |
| T 27 | 70.7766 | 318.4672 | 2868.72 | 44.72 | 2871.20 | –2.48 |
| T 28 | 70.8144 | 318.7124 | 2896.98 | 44.93 | 2897.87 | –0.89 |
| T 29 | 70.8526 | 318.9943 | 2925.01 | 45.17 | 2929.41 | –4.40 |
| T 30 | 70.8859 | 319.2268 | 2946.09 | 45.36 | 2948.86 | –2.77 |

(con't)

Table 5 (continued)

| EGIG SITE | LATITUDE (deg) | LONGITUDE (deg) | SEASAT ELEVATION* (m) | GEM-10B GEOID (m) | EGIG ELEVATION+ (m) | DIFFERENCE (m) (SEASAT-EGIG) |
|---|---|---|---|---|---|---|
| T 31 | 70.9095 | 319.3665 | 2960.15 | 45.47 | 2964.71 | –4.56 |
| T 32 | 70.9269 | 319.6371 | 2982.81 | 45.71 | 2986.28 | –3.47 |
| T 33 | 70.9447 | 319.9090 | 3005.18 | 45.95 | 3005.70 | –0.51 |
| T 34 | 70.9598 | 320.1785 | 3025.64 | 46.18 | 3027.71 | –2.07 |
| T 35 | 70.9761 | 320.4551 | 3045.38 | 46.42 | 3050.95 | –5.57 |
| T 36 | 70.9936 | 320.7209 | 3064.10 | 46.64 | 3069.30 | –5.20 |
| T 37 | 71.0074 | 320.9960 | 3083.49 | 46.88 | 3086.37 | –2.88 |
| T 38 | 71.0243 | 321.2734 | 3102.31 | 47.10 | 3105.17 | –2.86 |
| T 39 | 71.0423 | 321.5402 | 3118.64 | 47.31 | 3121.04 | –2.40 |
| T 40 | 71.0606 | 321.8047 | 3136.96 | 47.52 | 3139.96 | –3.00 |
| T 41 | 71.0783 | 322.0765 | 3152.83 | 47.73 | 3152.89 | –0.06 |
| T 42 | 71.0959 | 322.3465 | 3165.93 | 47.93 | 3164.68 | 1.25 |
| T 43# | 71.1198 | 322.6804 | 3174.48 | 48.18 | 3175.12 | –0.64 |
| T 44 | 71.1388 | 322.9501 | 3164.27 | 48.37 | 3166.90 | –2.63 |
| T 45 | 71.1566 | 323.2233 | 3151.36 | 48.57 | 3152.89 | –1.53 |
| T 46 | 71.1826 | 323.6338 | 3127.22 | 48.86 | 3130.28 | –3.06 |
| T 47 | 71.2092 | 324.0452 | 3101.61 | 49.14 | 3102.63 | –1.02 |
| T 48 | 71.2373 | 324.4543 | 3075.03 | 49.40 | 3074.92 | 0.11 |
| T 49 | 71.2685 | 324.9335 | 3035.20 | 49.71 | 3036.27 | –0.97 |
| T 50 | 71.2988 | 325.4109 | 2980.05 | 50.00 | 2991.11 | –11.06 |
| | | | | | | mean = –0.53 ±11.13 |

* referred to mean sea level using GEM-10B geoid

\+ referred to mean sea level, 1959 survey

\# Crete Station

Table 6

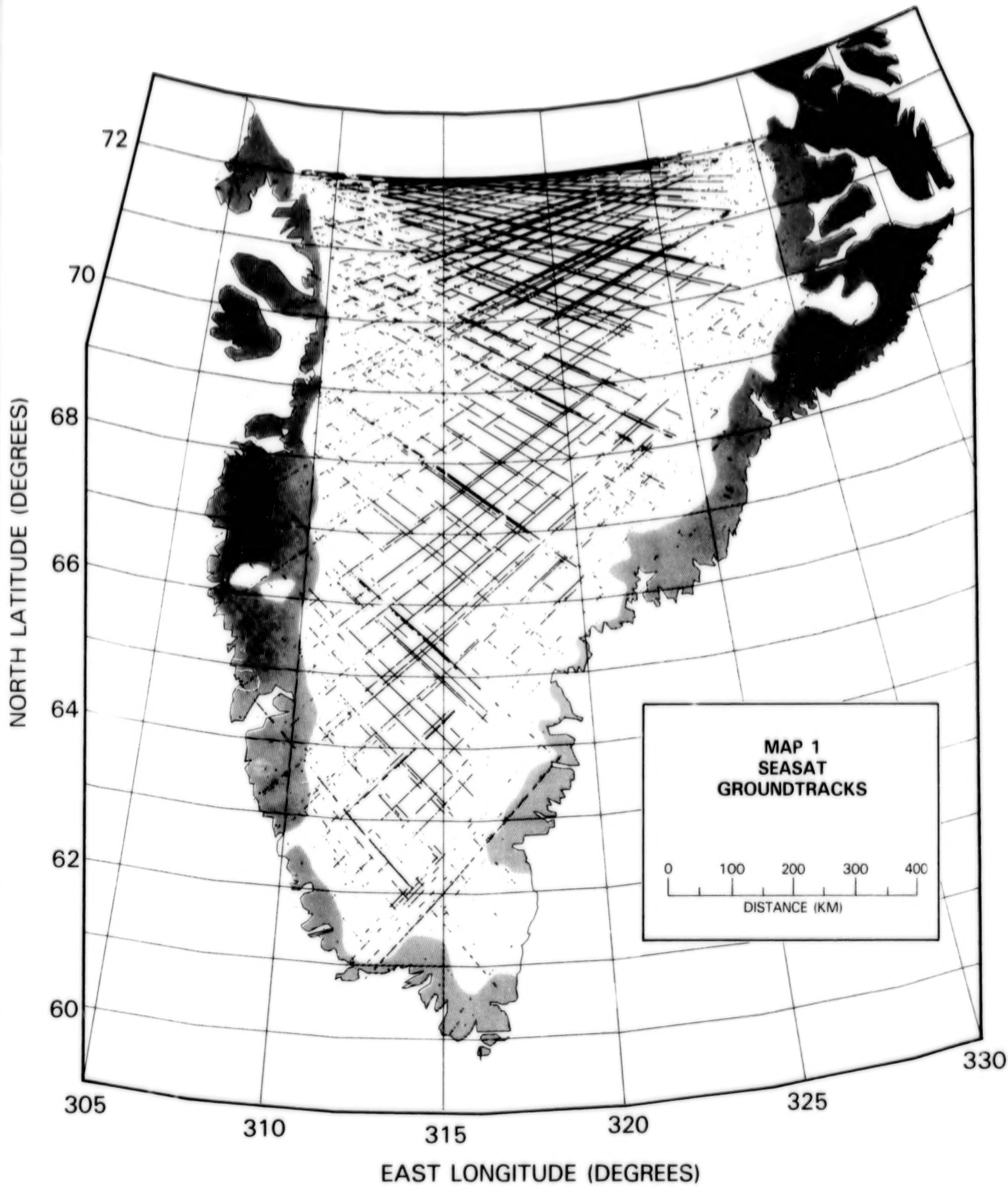
Comparison of surface elevations measured by Seasat and optical survey along EGIG line for region around Crete Station.

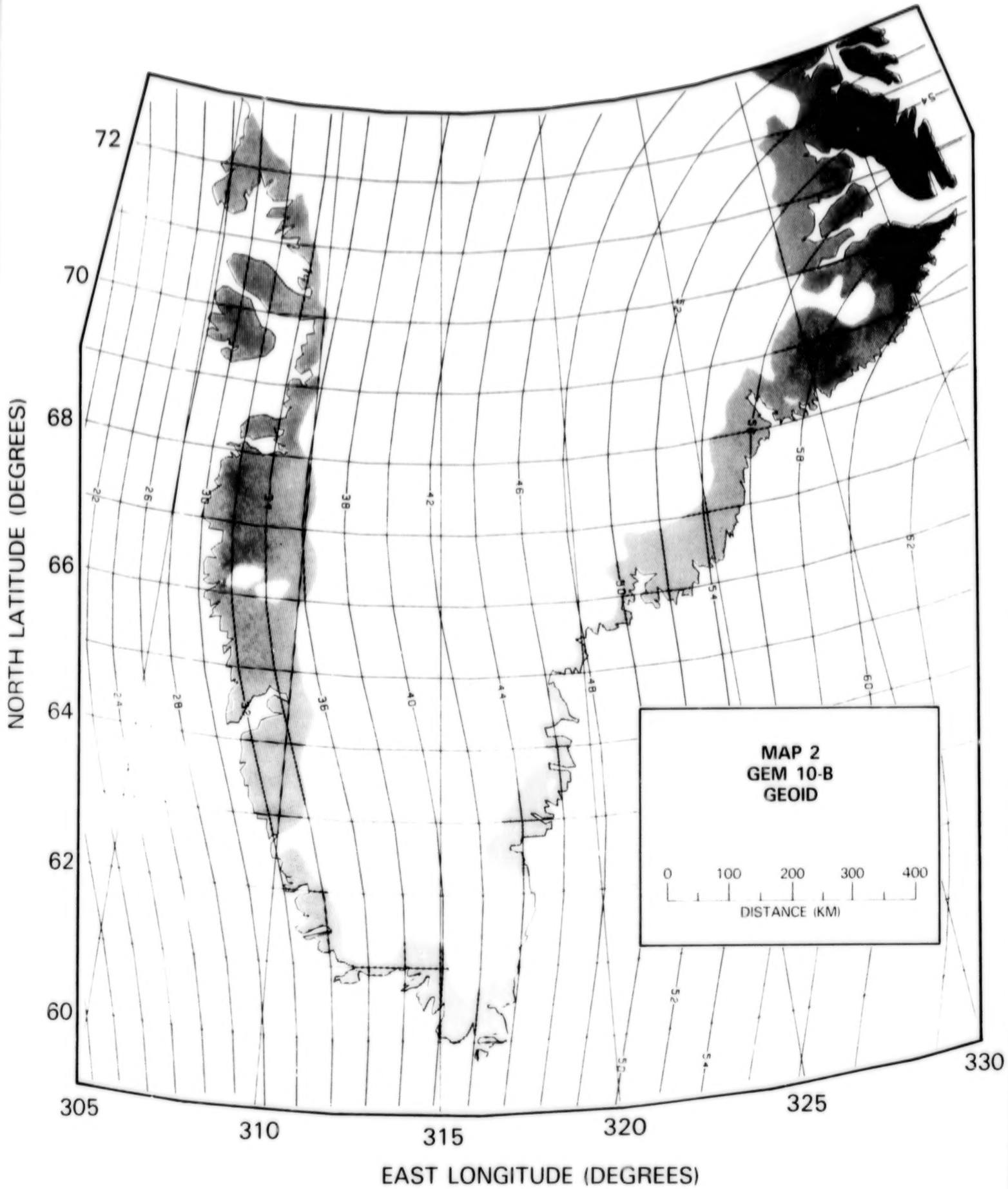
| EGIG SITE | LATITUDE (deg) | LONGITUDE (deg) | SEASAT ELEVATION* (m) | GEM-10B GEOID (m) | EGIG ELEVATION+ (m) | DIFFERENCE (m) (SEASAT-EGIG) |
|---|---|---|---|---|---|---|
| T 30 | 70.8859 | 319.2268 | 2946.21 | 45.36 | 2948.86 | –2.65 |
| T 31 | 70.9095 | 319.3665 | 2960.81 | 45.47 | 2964.71 | –3.90 |
| T 32 | 70.9296 | 319.6371 | 2982.82 | 45.71 | 2986.28 | –3.46 |
| T 33 | 70.9447 | 319.9090 | 3002.51 | 45.95 | 3005.70 | –3.19 |
| T 34 | 70.9598 | 320.1785 | 3026.32 | 46.18 | 3027.71 | –1.39 |
| T 35 | 70.9761 | 320.4551 | 3046.90 | 46.42 | 3050.95 | –4.05 |
| T 36 | 70.9936 | 320.7209 | 3064.17 | 46.64 | 3069.30 | –5.13 |
| T 37 | 71.0074 | 320.9960 | 3085.61 | 46.88 | 3086.37 | –0.76 |
| T 38 | 71.0243 | 321.2734 | 3101.99 | 47.10 | 3105.17 | –3.18 |
| T 39 | 71.0423 | 321.5402 | 3118.68 | 47.31 | 3121.04 | –2.36 |
| T 40 | 71.0606 | 321.8047 | 3136.75 | 47.52 | 3139.96 | –3.21 |
| T 41 | 71.0783 | 322.0765 | 3151.09 | 47.73 | 3152.89 | –1.80 |
| T 42 | 71.0959 | 322.3465 | 3162.91 | 47.93 | 3164.68 | –1.77 |
| T 43# | 71.1198 | 322.6804 | 3171.02 | 48.18 | 3175.12 | –4.10 |
| T 44 | 71.1388 | 322.9501 | 3164.61 | 48.37 | 3166.90 | –2.30 |
| T 45 | 71.1566 | 323.2233 | 3151.36 | 48.57 | 3152.89 | –1.53 |
| T 46 | 71.1826 | 323.6338 | 3126.35 | 48.86 | 3130.28 | –3.93 |
| T 47 | 71.2092 | 324.0452 | 3102.13 | 49.14 | 3102.63 | –0.50 |
| T 48 | 71.2373 | 324.4543 | 3073.70 | 49.40 | 3074.92 | –1.22 |
| T 49 | 71.2685 | 324.9335 | 3033.32 | 49.71 | 3036.27 | –2.95 |
| T 50 | 71.2988 | 325.4109 | 2989.92 | 50.00 | 2991.11 | –1.19 |
| | | | | | | mean = 2.60±1.26 |

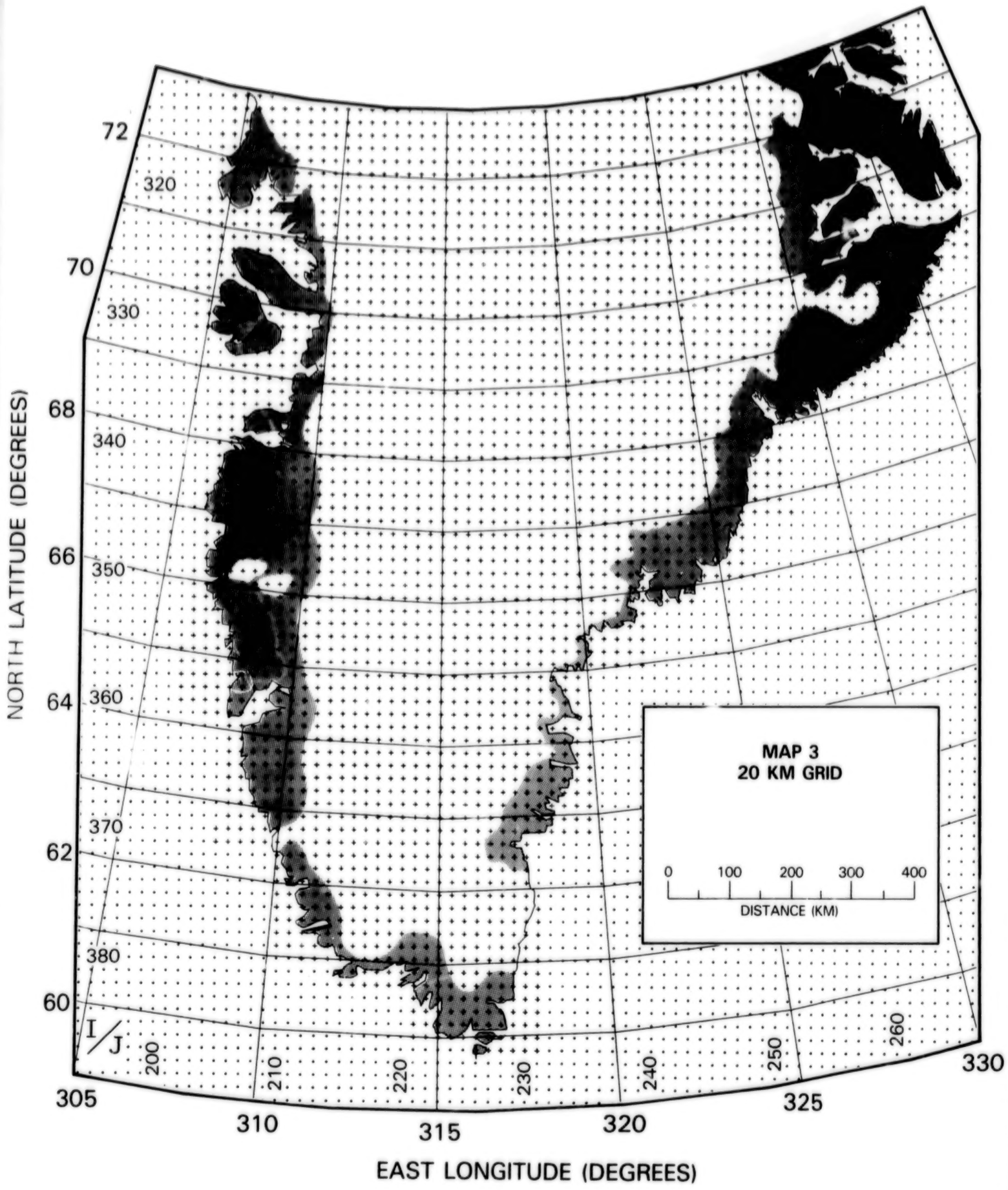
* referred to mean sea level using GEM-10B geoid

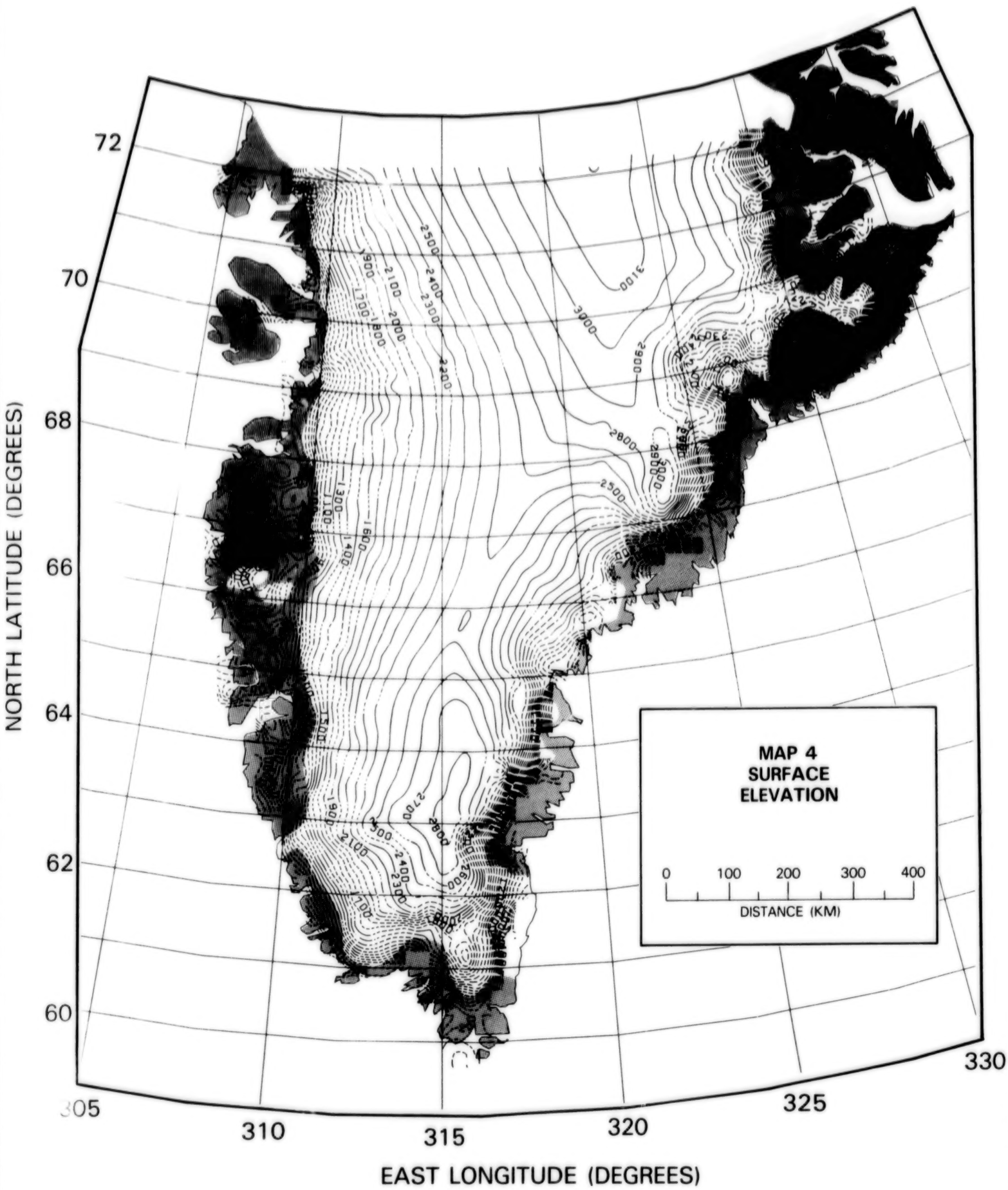
\+ referred to mean sea level, 1959 survey

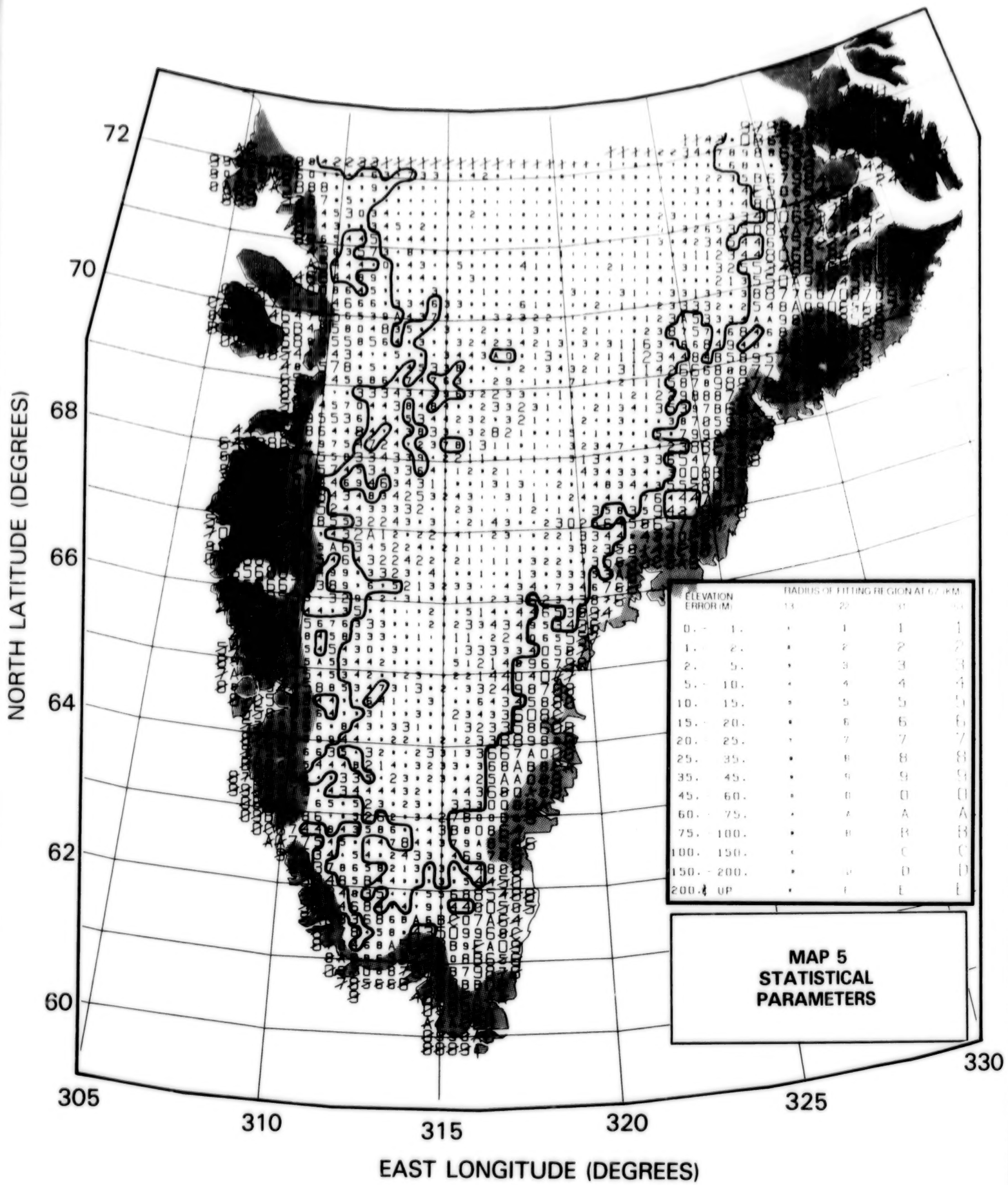
\# Crete Station

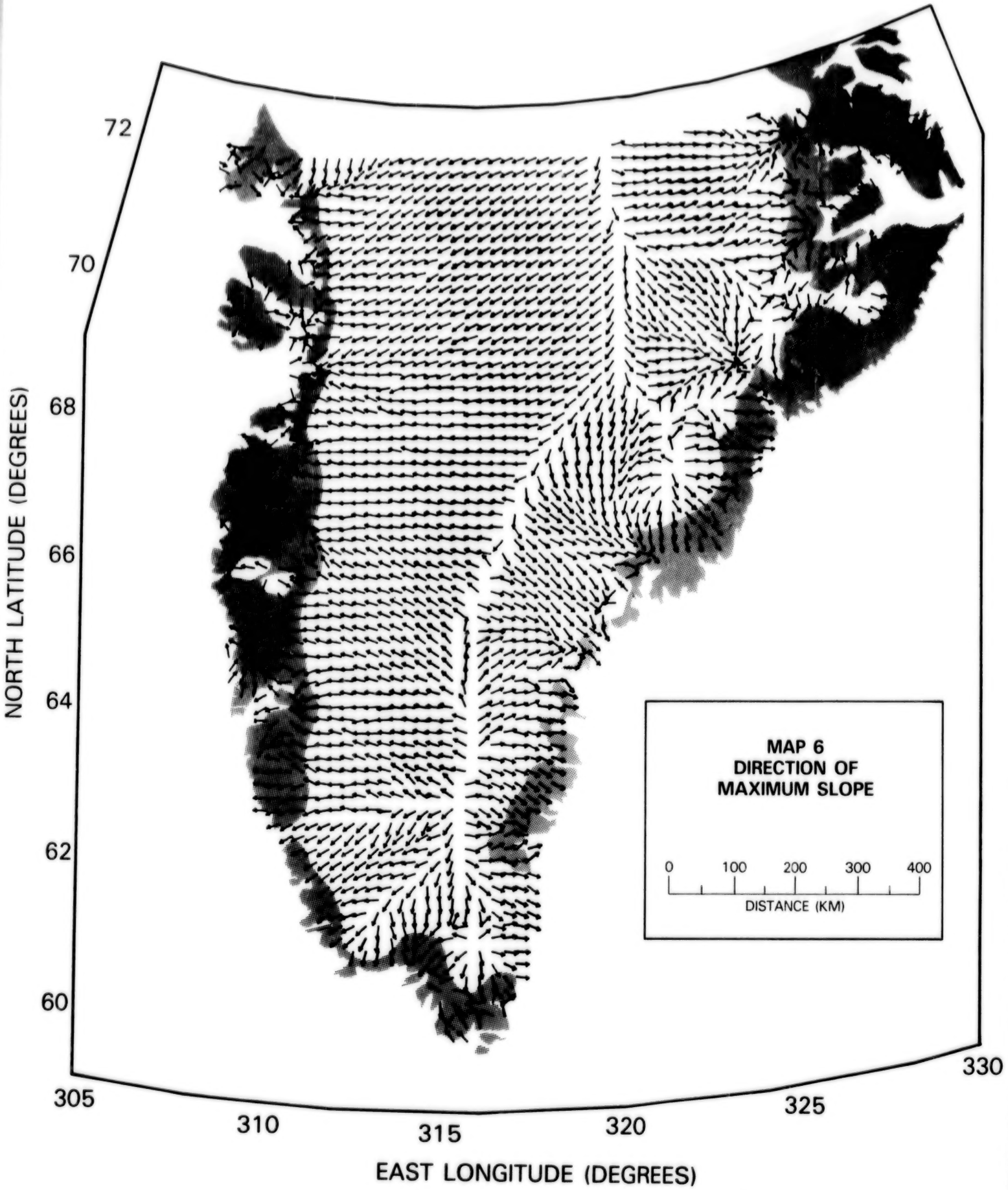

72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
MAP 1
SEASAT
GROUNDTRACKS
0
100
200
300
400
DISTANCE (KM)

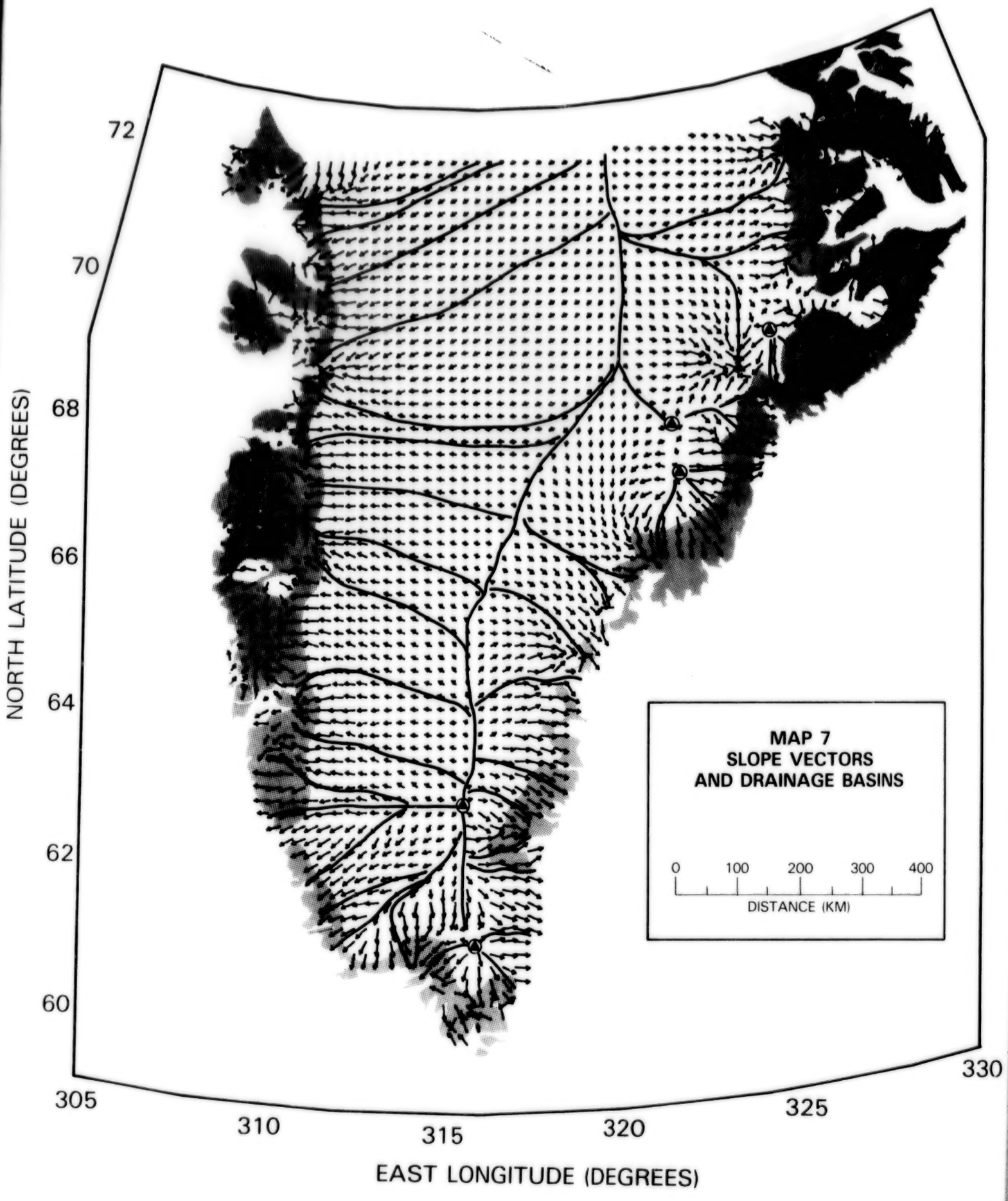

MAP 2
GEM 10-B
GEOID
0 100 200 300 400
DISTANCE (KM)
NORTH LATITUDE (DEGREES)
72
70
68
66
64
62
60
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)

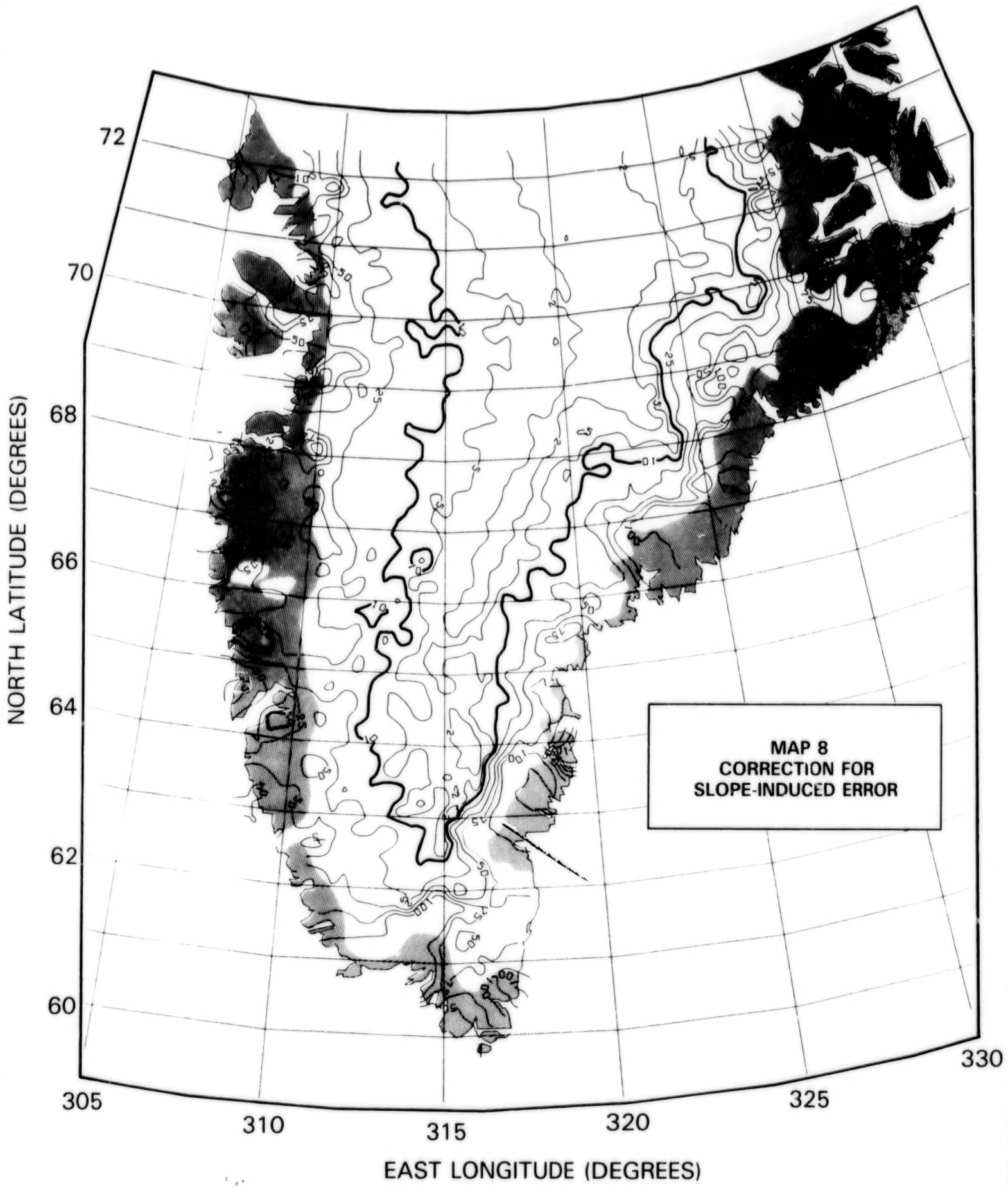

72
320
70
330
68
340
66
350
64
360
62
370
60
380
NORTH LATITUDE (DEGREES)
I/J
200
210
220
230
240
250
260
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
MAP 3
20 KM GRID
0
100
200
300
400
DISTANCE (KM)

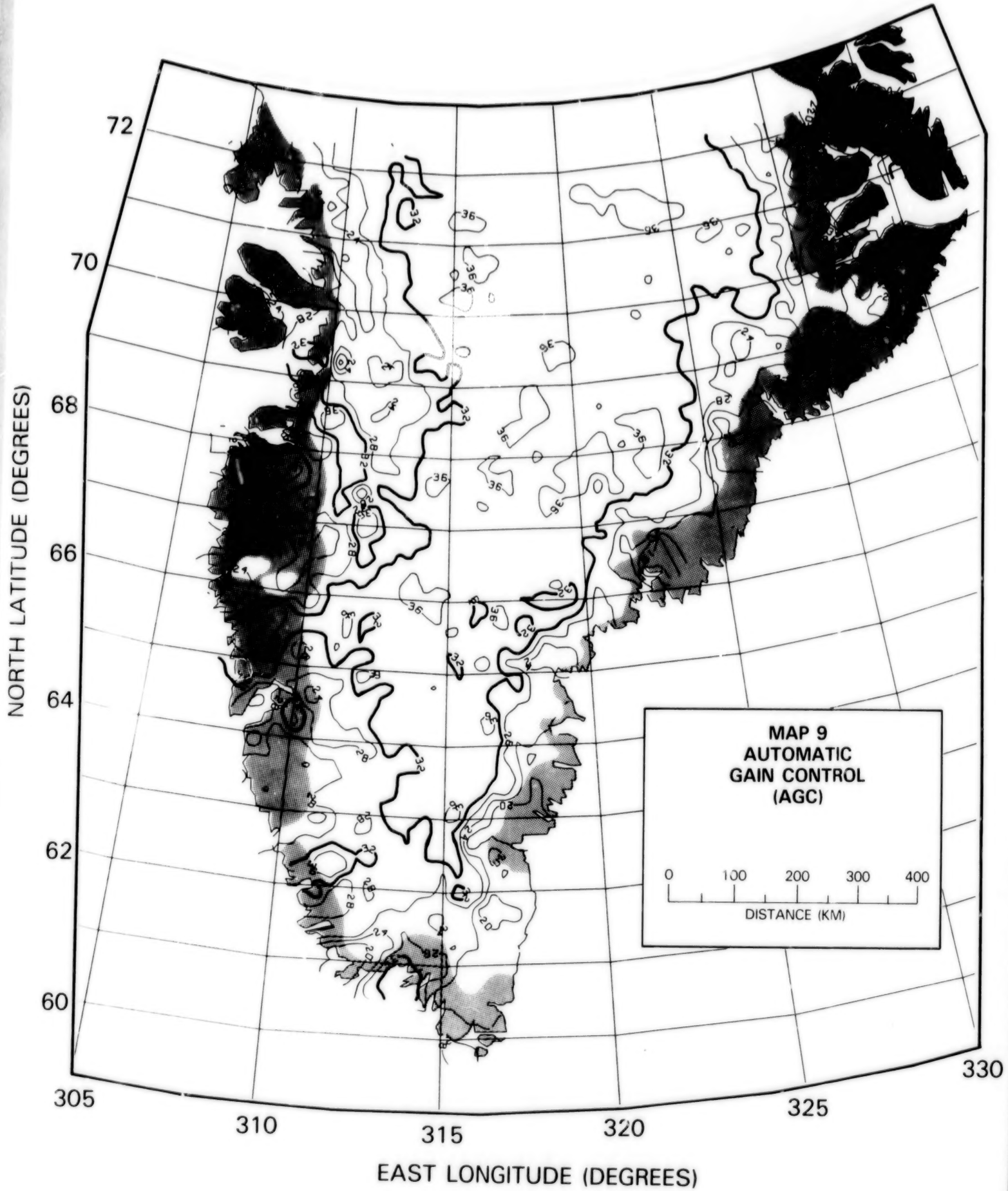

72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
MAP 4
SURFACE
ELEVATION
0
100
200
300
400
DISTANCE (KM)

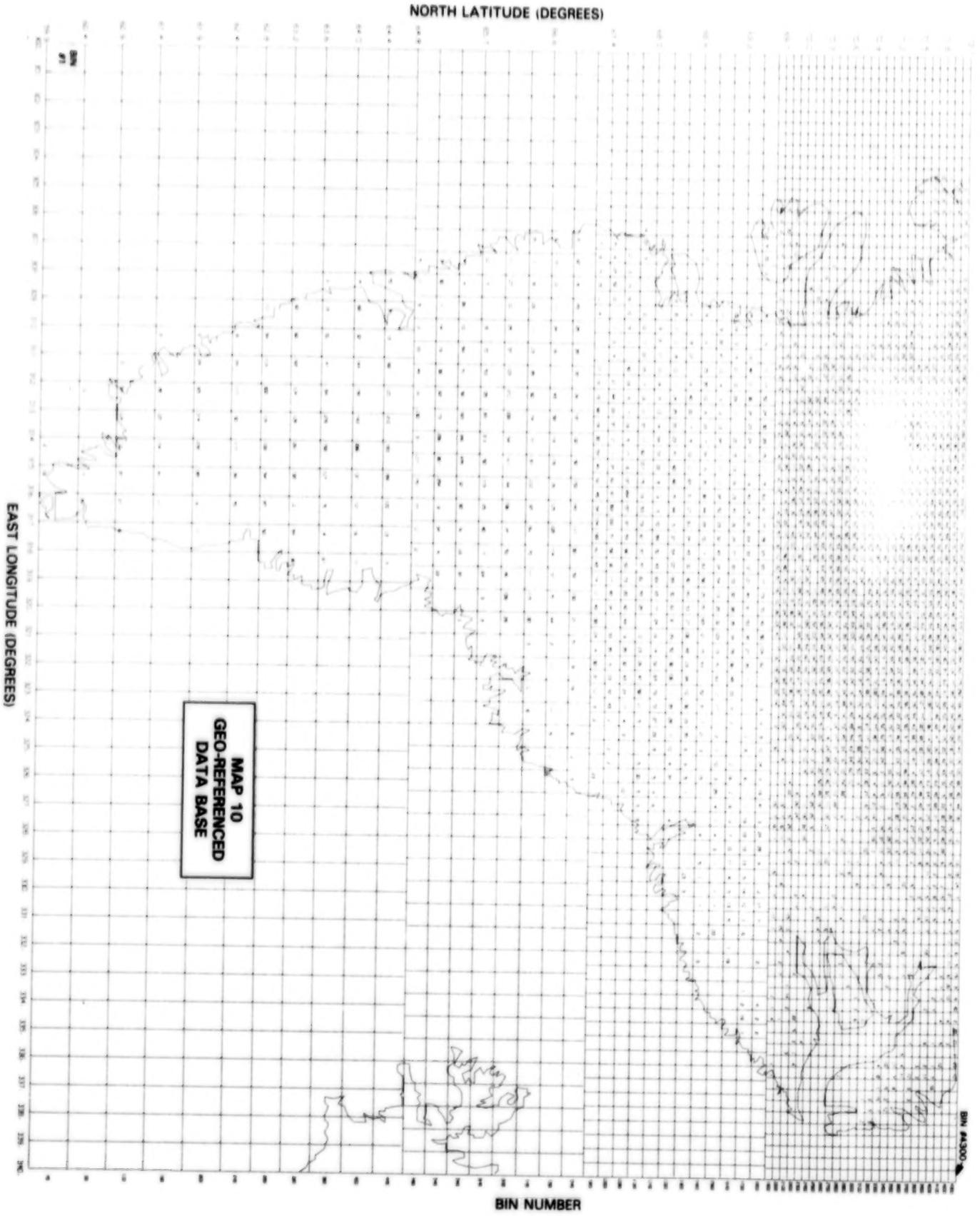

72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
ELEVATION ERROR (M)
RADIUS OF FITTING REGION AT 67 KM
0. - 1.
1. - 2.
2. - 5.
5. - 10.
10. - 15.
15. - 20.
20. - 25.
25. - 35.
35. - 45.
45. - 60.
60. - 75.
75. - 100.
100. - 150.
150. - 200.
200. & UP
MAP 5
STATISTICAL
PARAMETERS


72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
MAP 6
DIRECTION OF
MAXIMUM SLOPE
0
100
200
300
400
DISTANCE (KM)


72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
MAP 7
SLOPE VECTORS
AND DRAINAGE BASINS
0
100
200
300
400
DISTANCE (KM)


72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
MAP 8
CORRECTION FOR
SLOPE-INDUCED ERROR


72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
MAP 9
AUTOMATIC
GAIN CONTROL
(AGC)
0
100
200
300
400
DISTANCE (KM)

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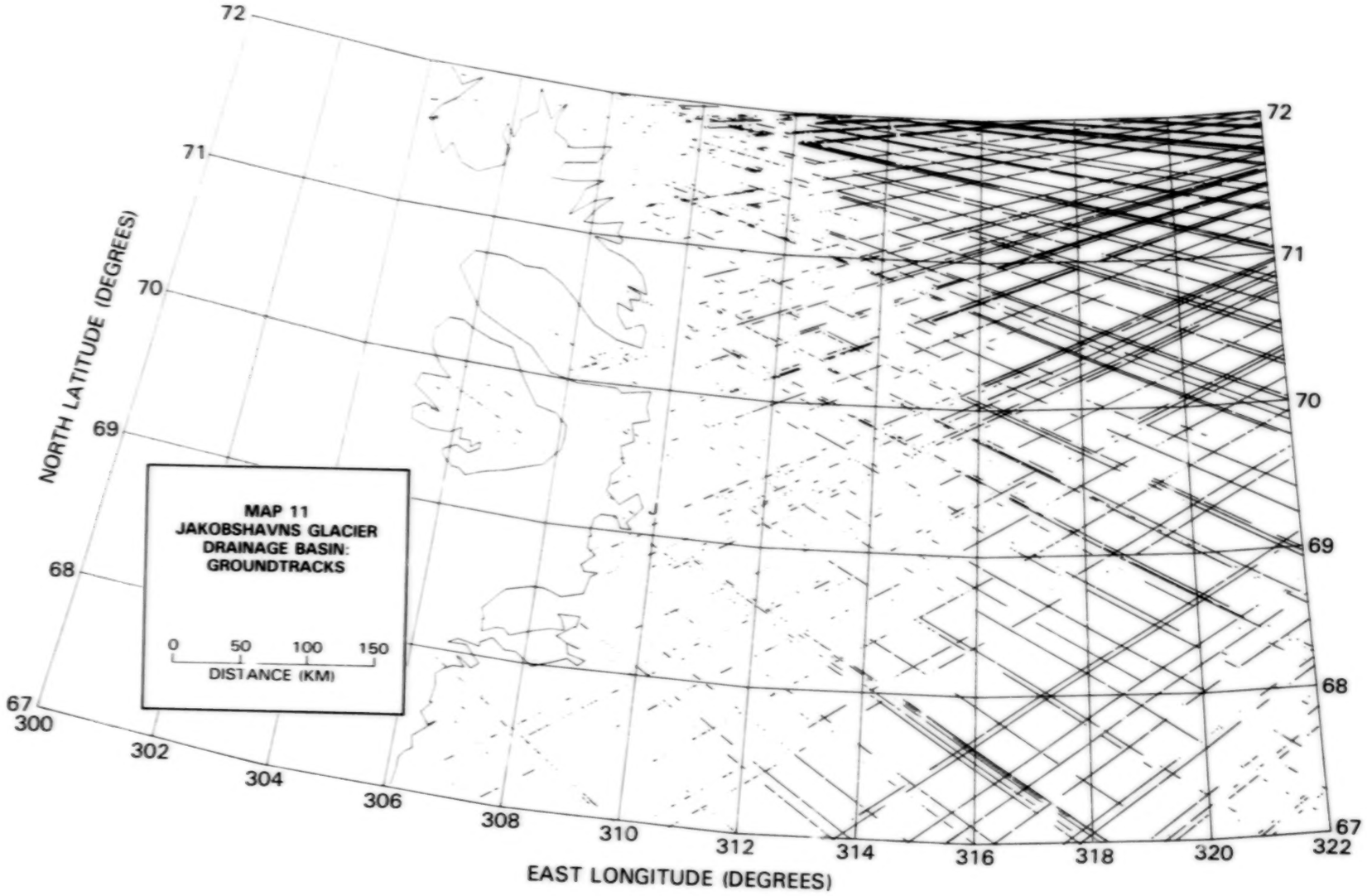
OF POOR QUALITY

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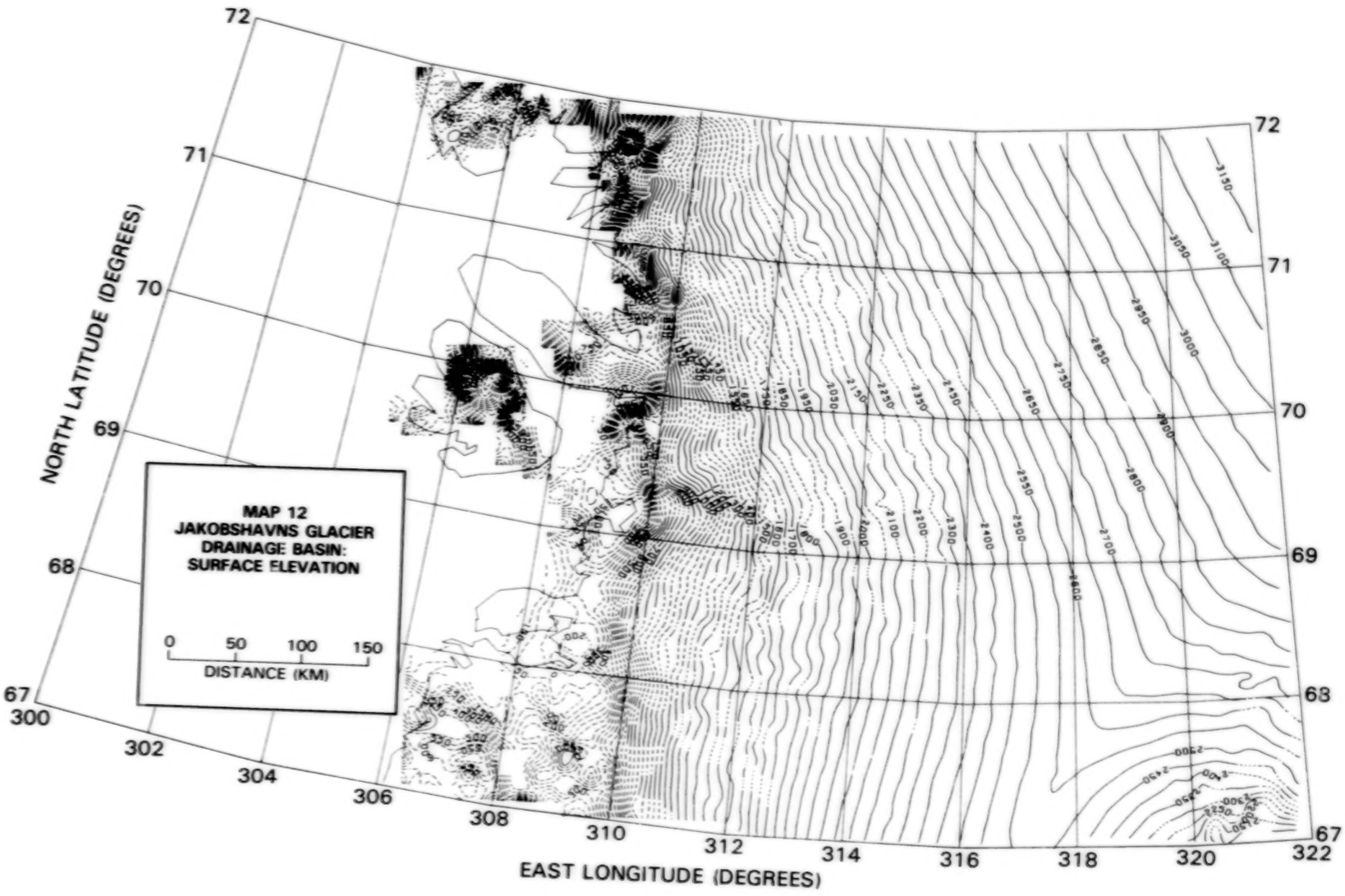


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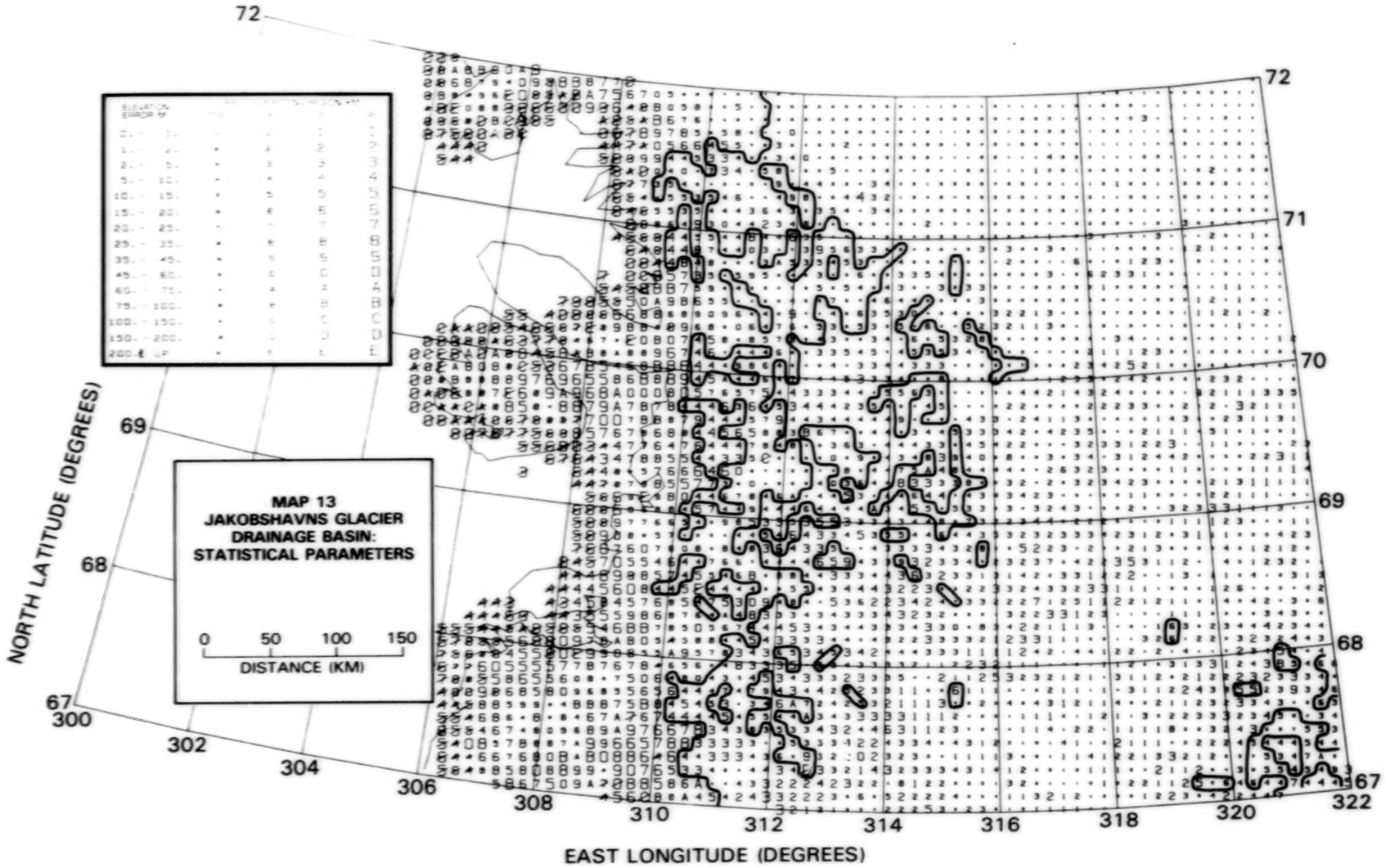
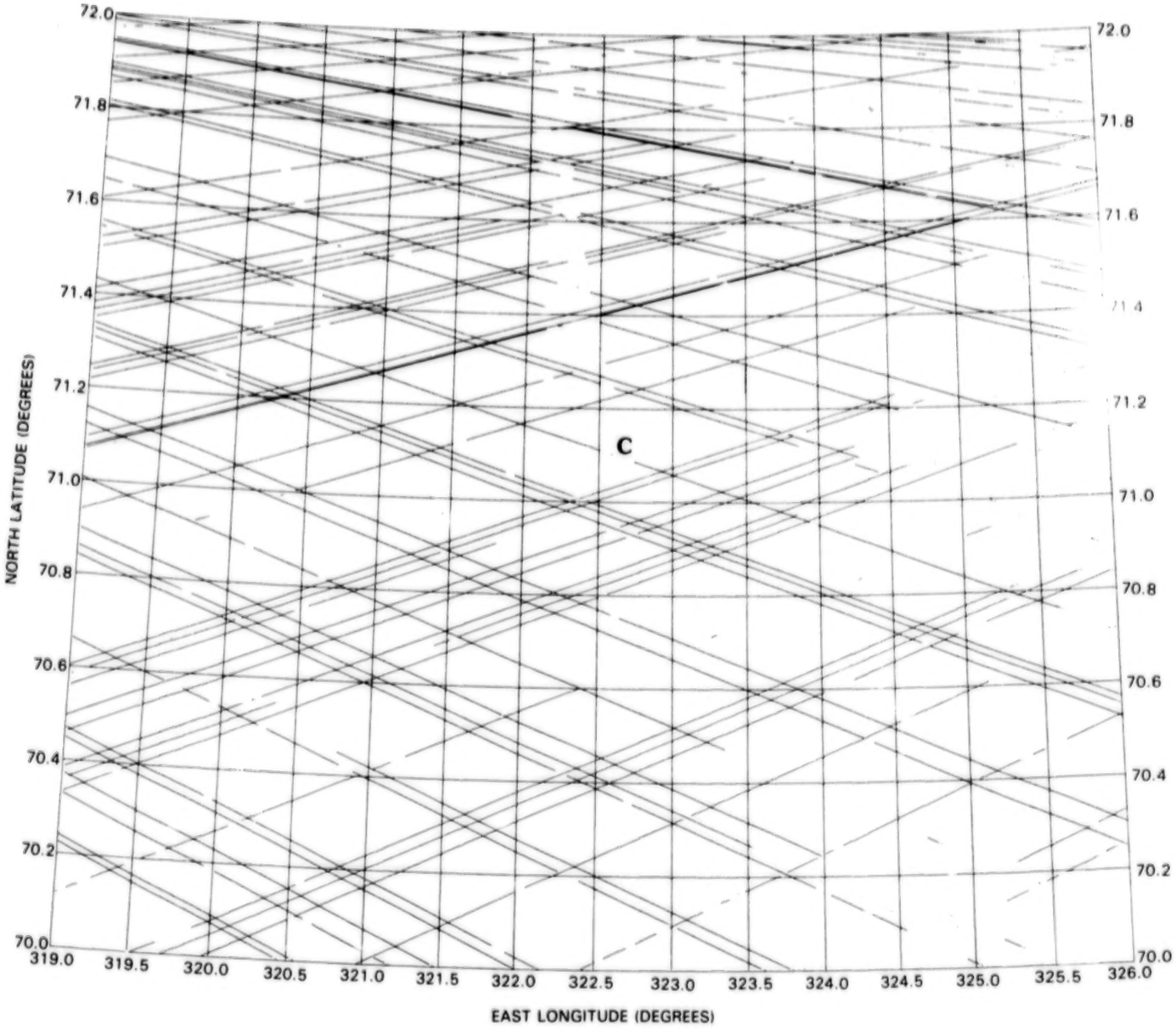
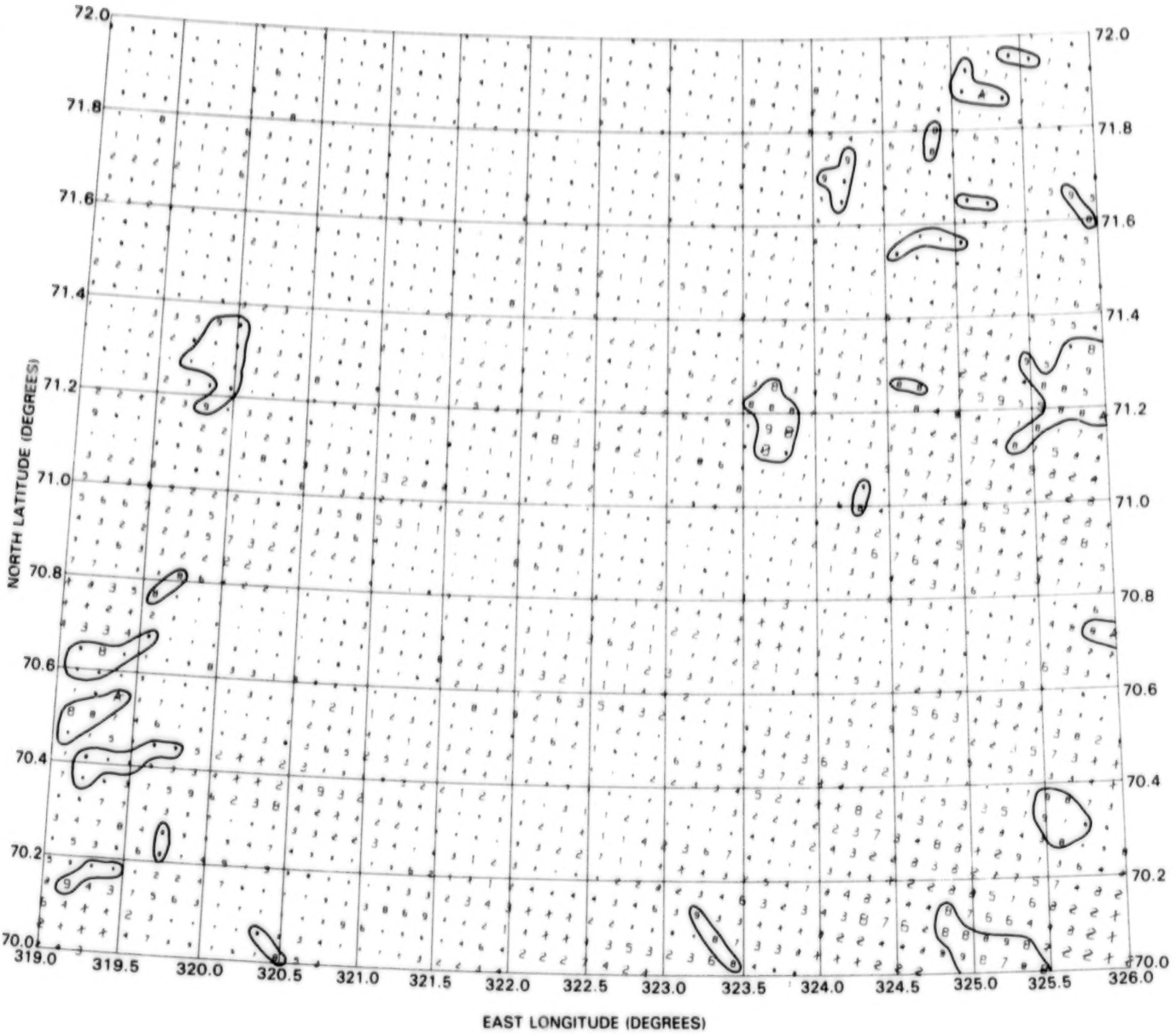





**MAP 14**
**CRETE STATION REGION:**
**GROUNDTRACKS**

0 20 40 60 80 100
DISTANCE (KM)




**MAP 15**
**CRETE STATION REGION:**
**STATISTICAL PARAMETERS**

0 20 40 60 80 100
DISTANCE (KM)

| ELEVATION ERROR (M) | RADIUS OF FITTING REGION (KM) 2.7 | 5.5 | 11 | 18 | 29 |
|---|---|---|---|---|---|
| 0.00 - 0.10 | | | 1 | 1 | 1 |
| 0.10 - 0.20 | | | 2 | 2 | 2 |
| 0.20 - 0.40 | | | 3 | 3 | 3 |
| 0.40 - 0.60 | | | 4 | 4 | 4 |
| 0.60 - 0.80 | | | 5 | 5 | 5 |
| 0.80 - 1.00 | | | 6 | 6 | 6 |
| 1.00 - 2.00 | | | 7 | 7 | 7 |
| 2.00 - 4.00 | | | 8 | 8 | 8 |
| 4.00 - 8.00 | | | 9 | 9 | 9 |
| 8.00 - 12.00 | | | 0 | 0 | 0 |
| 12.00 - 20.00 | | | A | A | A |
| 20.00&Up | | | B | B | B |

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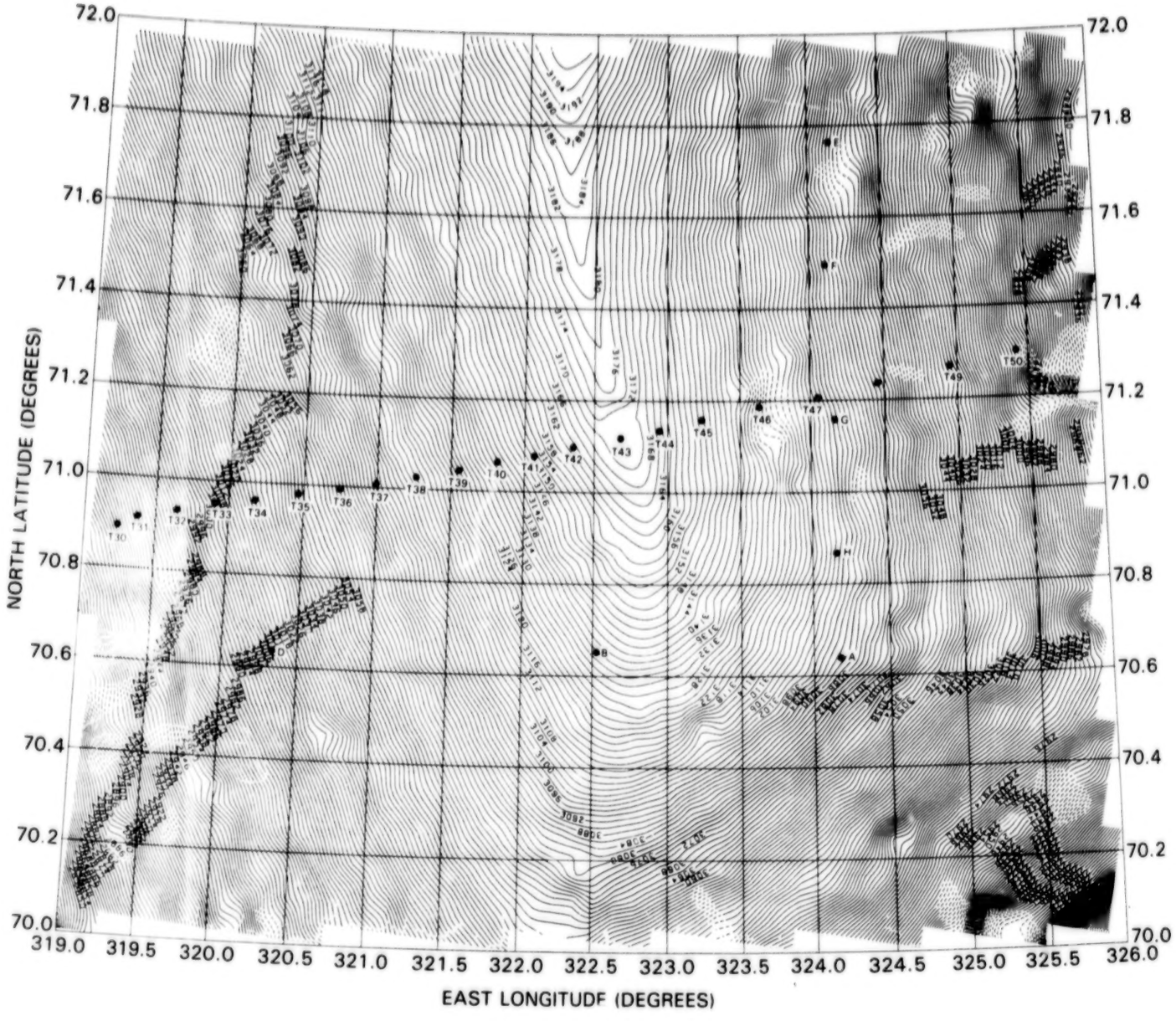


**MAP 16**
**CRETE STATION REGION:**
**SURFACE ELEVATION**

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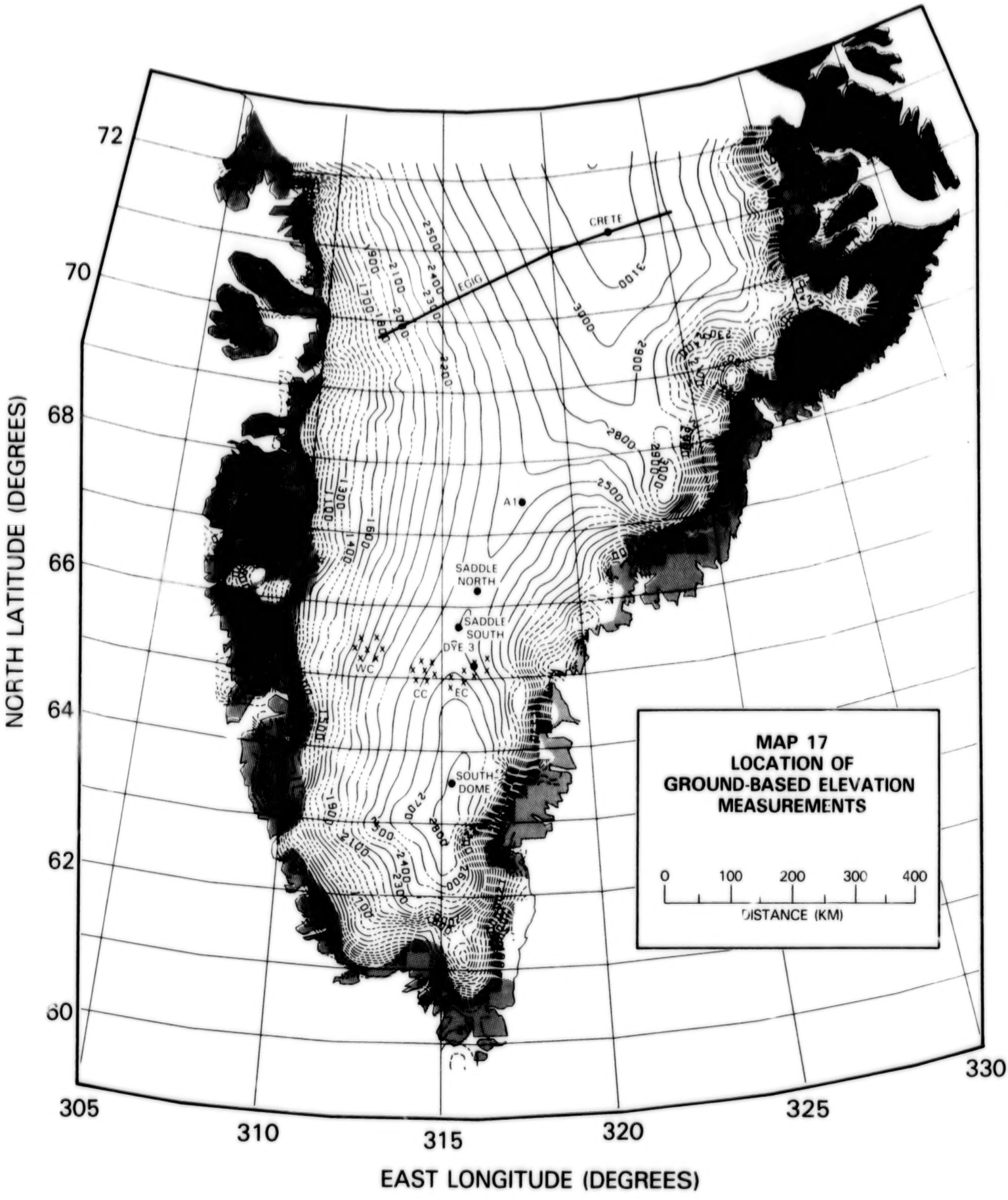
72
70
68
66
64
62
60
NORTH LATITUDE (DEGREES)
305
310
315
320
325
330
EAST LONGITUDE (DEGREES)
GRETE
EGIG
A1
SADDLE NORTH
SADDLE SOUTH
DYE 3
WC
CC
EC
SOUTH DOME
MAP 17
LOCATION OF
GROUND-BASED ELEVATION
MEASUREMENTS
0
100
200
300
400
DISTANCE (KM)

END

DATE

FILMED

JUL 26 1990